

MILITARY ILLUSTRATED

□ PAST & PRESENT □

No. 4

December 1986/January 1987

£1.95

Davis:

**U-Boat Uniforms
1939-45**

Haythornthwaite:

**Royal Artillery
Officers, 1900-1914**

Chartrand & Embleton:

French-Canadian Redcoats, 1812-15

Brzezinski & Hook:

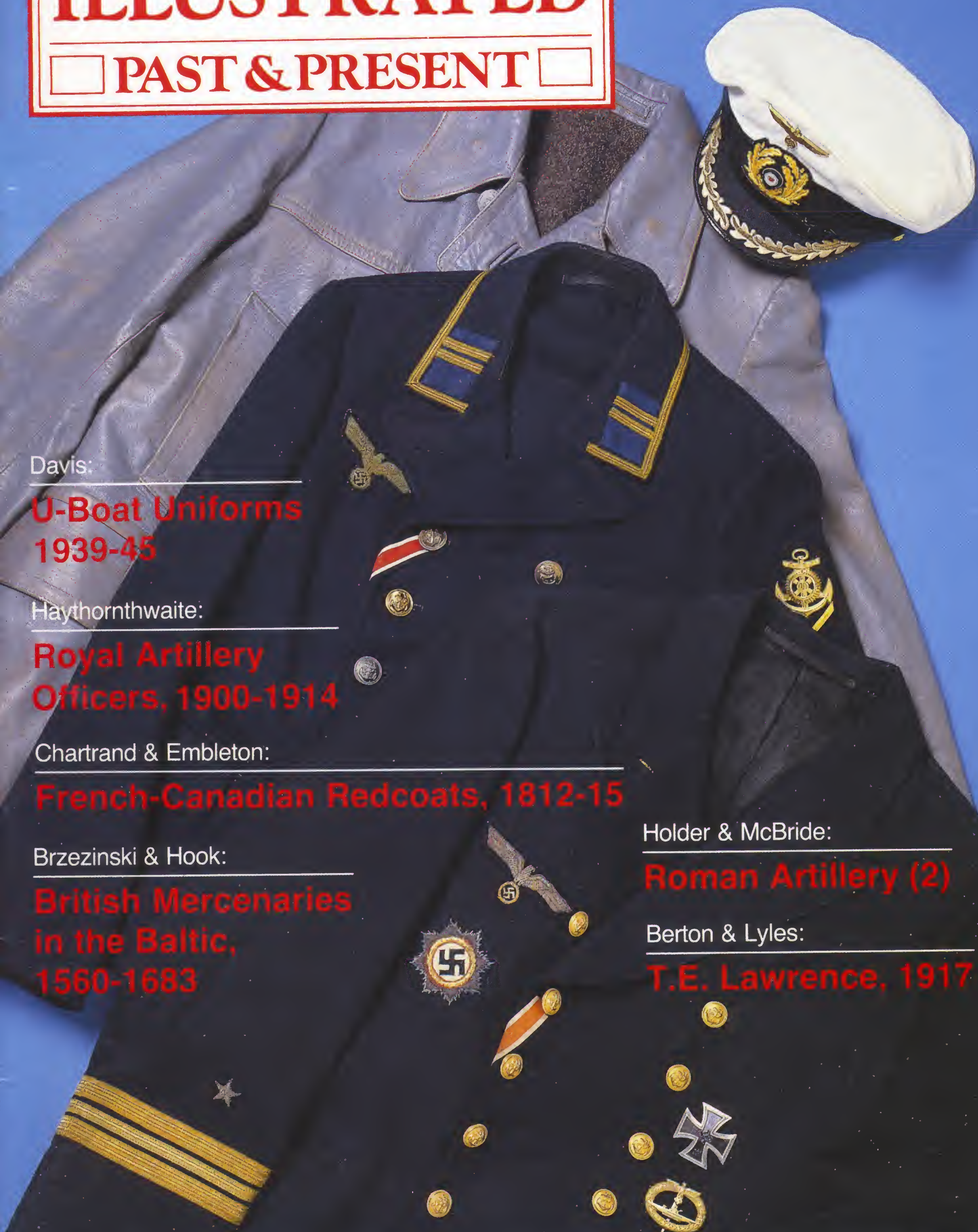
**British Mercenaries
in the Baltic,
1560-1683**

Holder & McBride:

Roman Artillery (2)

Berton & Lyles:

T.E. Lawrence, 1917



MILITARY ILLUSTRATED

□ PAST & PRESENT □

No. 4

ISSN 0268-8328

DECEMBER 1986/JANUARY 1987

8

U-Boat Uniforms, 1939-45 (1)

BRIAN LEIGH DAVIS

17

British Mercenaries in the Baltic, 1560-1683 (1)

RICHARD BRZEZINSKI

Paintings by RICHARD HOOK

24

Officers' Uniforms, Royal Regiment of Artillery, 1900-1914

PHILIP J. HAYTHORNTHWAITE

30

Roman Artillery (2)

PAUL HOLDER

Painting by ANGUS McBRIDE

38

The Lower Canada Select Embodied Militia Battalions, 1812-15

RENÉ CHARTRAND

Paintings by GERRY EMBLETON

50

Gallery: T. E. Lawrence, 1917

JOE BERTON

Paintings by KEVIN LYLES

On The Screen	4	The Auction Scene	6
Classifieds	4	Reviews	7



Our cover illustration
is a selection of U-Boat uniform
items, 1939-45: see Brian Leigh
Davis's article beginning on p. 8
(Photo: Michael Dyer
Associates)

Published bi-monthly by
MILITARY ILLUSTRATED LTD.
169 SEVEN SISTERS RD.
LONDON N4 3NS, ENGLAND
(Tel: 01-263-7331)

Production co-ordination by
MM Productions Ltd.
1 Brookside
Hertford, Herts SG13 7LJ

Typesetting by Computerised
Typesetting Services Ltd.,
Finchley, London

Colour reproduction by
Sean Studios Ltd., Dublin

Editorial design by
Victor Shreeve

Printed in Great Britain by
Staples Printers Kettering Ltd.

Editor:
MARTIN WINDROW

Editorial:
Military Illustrated Ltd.
PO Box 280, Lewes, E. Sussex
BN8 5PW

Advertising:
Valerie Scott
23 Stafford Rd., Petersfield,
Hants GU32 2JF (Tel: 0730-63976)

Distribution:
UK news agency:
Spotlight Magazine Distribution
1 Benwell St., London N7 7AX
(Tel: 01-700-4600)

UK hobby and book trade:
Photobooks Information Services
7 Colwall Station Industrial Estate,
Malvern, Worcs WR13 6RN
(Tel: 0684-40825)

N. America:
Bill Dean Books Ltd.
151-49 7th Avenue,
Whitestone, NY 11357
(Tel: 1-718-767-6632)
(\$3.95 per copy; \$30.00 year's
subscription)

France & Belgium:
Histoire & Collections
12 rue Hippolyte Lebas
75009 Paris
(Tel: 45-26-42-94)
(Prices: 27 fr. per copy;
150 fr. year's subscription
- France; 170 fr., other EEC)

Italy:
Tuttolibri, P.O. Box 395,
43100 Parma
(Prices: L.it. 6,500 per copy;
L.it. 36,000 annual subscription)

Publishers' subscription rates:
UK, £16; other European, £20 or
local equivalent; USA & other
non-European (by Air Speed),
US \$30 or £ sterling equivalent:
all rates, 6 issues.

All articles and illustrations published in this magazine, and all copyright and other intellectual property rights therein belong to Military Illustrated Ltd. All rights conferred by the Law of Copyright and other intellectual property rights and by virtue of international copyright conventions are strictly reserved to

Military Illustrated Ltd.; and reproduction in any form or storage in any retrieval system requires the written consent of the Publishers. While all reasonable care will be taken, the Publishers cannot accept responsibility for any material submitted for inclusion in the magazine.



**Brian
Leigh Davis**

**Richard
Brzezinski**



René Chartrand

Joe Berton



In this issue we extend a warm welcome to four first-time contributors. **Brian Leigh Davis** is an author, research consultant and film adviser specialising in uniforms and equipment from the Second World War to the present. Among the several publications which have earned him an international reputation we need only mention his *German Army Uniforms and Insignia 1933-45* (Arms & Armour Press, 1971), which remains unsurpassed. Brian's own military service with the Life Guards in Egypt and Cyprus, 1953-57, provides us with our 'mug shot'.

Richard Brzezinski is a name which will be new to most readers, and we are proud to be among the

first to publish his meticulous research. Born in 1961, Richard has travelled (by hitch-hiking) over much of Europe, America and Africa, including some time spent on an archaeological dive on a Roman shipwreck in Sicily. A physics graduate of Bristol University, he is currently seeking work as a technical writer, while pursuing his interest in military history, particularly of the 16th and 17th centuries. He will soon publish two *Men-at-Arms* titles on the Polish army of that period.

René Chartrand, well known as the senior military curator at the HQ of the Canadian National Historic Parks, was born in 1943 and grew up in Montreal, the USA, and the

Bahamas. He has published many articles in specialist and popular magazines, and is the co-author of *Military Uniforms in Canada*, with Jack L. Summers; *The French Soldier in Colonial America*; and — coming in 1987 — *The US Army of the War of 1812*, with Donald E. Graves. We are particularly grateful for René's generous contribution to our pages.

Joe Berton is internationally known for his military miniatures, which have gained recognition in many competitions. His main area of interest is the Middle East, where he has travelled extensively. Joe teaches art in Oak Park, Illinois, a suburb of Chicago. He collects Victorian militaria, and 'anything Bedouin'. [M]

ON THE SCREEN

Video releases:

'To Hell and Back' (CIC Video: PG)

'Merrill's Marauders' (Warner Home Video: U)

'The Bridge at Remagen' (Warner Home Video: PG)

These new releases are all based upon true stories, and demonstrate some changes in emphasis in the American war movie between the mid-1950s and the late 1960s.

Jesse Hibbs' *To Hell and Back* (1955), based on Audie Murphy's autobiography, must be almost unique in that the hero is played by himself. After some pre-war sequences, we see his attempts to enlist in the US Navy and Marines rejected because of his small size, but he is finally accepted by the Army.

Most of the film deals with incidents from the campaigns in Sicily, Italy, France and Germany, where Murphy served with the 3rd Infantry Division. His bravery earns him many medals and the respect of his comrades. At first he refuses promotion in order not to be separated from his friends; but by the end of the war he is a lieutenant, and the most decorated GI of World War II. The film is inevitably episodic, but Murphy gives a quietly sincere performance. Each action sequence tries to outdo the last, and by the climax Murphy is holding off scores of enemies supported by armour with the machine gun atop a burning tank. Assuming that this scene, typical of 1950s films, plays fair with the facts

in that it is based on Murphy's real experiences, the film may be seen as an unremarkable production about a very remarkable person.

Merrill's Marauders (1962) concerns the 3,000-man deep penetration unit led in Burma in 1944 by Brig. Gen. Frank Merrill. At first avoiding Japanese contact as they try to locate a particular enemy-held village, they are later forced to fight their way through. They succeed in destroying their target, however, and are looking forward to a well-earned rest when they are ordered to advance further behind enemy lines, ultimately to assist in the Allied attack on Myitkyina. Jeff Chandler, in his last rôle, plays Merrill as a man having to cope with impossible orders, a dwindling and exhausted force, and his own disintegrating health. Ty Hardin plays his second-in-command, Stockton, who asks to be relieved of his responsibilities, but takes over when Merrill collapses after an arduous mountain ascent.

Sam Fuller, the director, made many memorable war films including the comparatively recent *The Big Red One* based on his own experiences with the 1st Infantry Division. *Merrill's Marauders* was arguably his best, boasting a strong narrative well integrated with the personalities involved. The action scenes, and others poignantly reminding us of the human cost of war, are excellent.

John Guillermin's *The Bridge at Remagen* (1968) is set in March 1945. The Germans have blown all the



Ben Gazarra and George Segal in 'The Bridge at Remagen'

Rhine Bridges except the Ludendorff Bridge at Remagen; now the order comes to destroy that too, despite the fact that 75,000 men of the 15th Army will thus be trapped in the path of the advancing Allies. Gen. Brock gives command at the bridge to Maj. Kreuger (Robert Vaughn), but they agree that the bridge will not be blown until the last possible moment. Promised 1,600 men, Kreuger arrives to find only 200; and the necessary explosives are defective.

Meanwhile, an armoured reconnaissance unit of the US 9th Armored Division is ordered to head directly for the bridge. Lt. Phil Hartman (George Segal) fights through to

Remagen with his jeeps and half-tracks, to find much German traffic still crossing. To shorten the war and save lives, he is ordered to assault immediately with the troops available on the spot, in the face of Kreuger's desperate defence.

An intelligent screenplay suggests that there is good and bad on both sides. The war-weary Hartman has to cope both with the veteran Sgt. Angelo (Ben Gazarra), a cynical looter; and the glory-hunting Maj. Barnes (Bradford Dillman), who unhesitatingly sends his men into danger from a safe vantage-point. Most of the Germans are given a

[continued on page 6]

WANTED: Information on South & Central American Military Uniforms, Badges, Organisation, all periods. Will help anyone interested in subject. Terry Hooker, 27 Hallgate, Cottingham, North Humberside HU16 4DN.

FOR SALE: Franch Militaria, 1880-present day; also Spanish Civil War, and Elite Forces items (various countries). For detailed list send two stamps to: Universal Antiques Ltd., PO Box, Bantry, Co. Cork, Eire.

Regimental, Divisional, Unit and general military history books bought and sold. Offers, or SAE for list, to: The Collector, 36 The Colonnade, Piece Hall, Halifax, HX1 1RS, England.

MEDALS
Extensive, interesting list, competitive prices: SAE please to M. Carter (OMRS), PO Box 470, Slough SL3 6RR; Tel: 0753-34777.

MILITARY BOOKS FOR SALE, out of print campaign, unit history, uniform and weapon books. SAE for list to DEREK HAYLES, 35 St. MARKS ROAD, MAIDENHEAD, BERKS SL6 6DJ.

Military Books bought and sold; SAE for current catalogue to: Mike Smith, Cheliff Books, 41 Ettarby St., Stanwix, Carlisle CA3 9JD (Tel. 0228-46952).

LEGIONNAIRES
Best selection of Foreign Legion items: Badges, Records, Videos, Diplomas, etc. 75p current illustrated catalogue. LEGIONNAIRES, Golden Hill Fort, Freshwater, Isle of Wight PO40 9TF.

MILITARY HISTORY ON VIDEOCASSETTES
See military history as it happened! World War 1 through the Falklands campaign. The other side of World War II: original German combat newsreels and features of the great battles. Rare Allied Army and Air Force documentaries. Also Korea, Vietnam, and contemporary Soviet Army. Over 300 titles reproduced from original sources in excellent VHS or PAL Standard. Reasonable prices, fast service. Write for phone for free illustrated catalog. **INTERNATIONAL HISTORIC FILMS**, Box 29033, Chicago, Illinois 60629, Phone 312-436-8051.

4

*Military Illustrated Ltd.
169 Seven Sisters Road
London N4 3NS, England*

Expiry date Signature

Boxed semi-display ☐ Normal lineage insertion ☐

4

Stephen J. Greenhill

vakian locations. The standard of 'tactical credibility' in the combat scenes, and of accuracy in the uniforms, vehicles and equipment of both sides, shows how far Hollywood had progressed since *To Hell and Back*. The anti-war sentiments and big-budget spectacle may rest uneasily together; but the film is well worth seeing by those who have missed its several TV transmissions.

Frederick Wilkinson

Lot 730 in Kent Sales' 10 September auction.



REVIEWS

'Green Berets At War' by Shelby Stanton; Arms & Armour Press Ltd; 360pp; maps & 17 illus.; appendices; index; £14.95

Following his definitive and much-acclaimed *Vietnam Order of Battle* and his vivid *The Rise and Fall of an American Army*, Capt. Stanton continues his studies of the Vietnam war with this definitive account of the creation of Special Forces in the Pacific in 1956; of their advisory rôles in several Oriental countries; and of their combat deployments in Laos and Vietnam. A former SF officer and veteran himself, he brings a sure and positive feeling to his subject. He draws upon material specially declassified for this book; upon original unit records and reports; and upon first-hand interviews. He records — as well as the many unqualified successes achieved — the difficulties and handicaps suffered by SF, in an account as impressive for its candour as for its meticulous research.

After an early period under CIA control, including regular clandestine cross-border missions into Laos and North Vietnam, SF found what would become their most crucial task in the Civilian Irregular Defense Group programme. A multiplying network of crude armed camps were constructed in the western highlands of South Vietnam, forming the focus around which the despised and abused mountain tribes or 'Montagnards' were pressed into service — by a Saigon government which had consistently treated them with hostile suspicion — to block Viet Cong and NVA encroachment. The small SF teams scattered throughout this chain of isolated strongholds established excellent relations with the 'Yards' — though seldom with the all-too-often corrupt and incompetent RVN Special Forces (the LLDB) with whom they also had to work. Capt. Stanton's accounts of the defence of these camps — sometimes heroically successful, sometimes ending in tragic defeat — form a thread throughout this book which is both dramatic and compelling. Space alone prevents this reviewer from giving way to the temptation to quote at length. These accounts will dispel forever any reader's illusion that all US forces in Vietnam enjoyed massive supporting firepower and local superiority.

The lack of support on the battlefield suffered by many of these tiny garrisons was paralleled by a more general ambiguity — sometimes degenerating into open political and command hostility — suffered by SF as a whole. Severely over-stretched by casualties, recruiting shortfalls, and a declining retention rate, SF were in 1968 misused as conventional infantry during the urban fighting of the Tet Offensive, and took heavy losses.

It is extraordinary to read that after the demise of the CIDG programme at the end of 1970, both the US Ambassador and the Commander

US Army Vietnam refused to attend the final parade of 5th SF Group at Nha Trang on 28 February 1971. This was a shabby farewell to soldiers who had shown extraordinary courage, ingenuity, resource and endurance in a hard and bloody war. That the Green Berets in Vietnam were an authentically élite force cannot be doubted by any reader of this careful, scholarly, and restrained account, meticulously annotated and sourced, and lucidly organised. Capt. Stanton is also to be commended for the excellence of his maps and charts; and for the care with which the small but telling section of photographs has been selected. The book concludes with a heartrending catalogue of the last known circumstances of those Special Forces soldiers listed as 'Missing in Action'. This important book is highly recommended. **SD**

Osprey Men-at-Arms, MAA 180-183; all 48pp.; illus.; 8 col. pp.; available in case of difficulty direct from George Philip Services, FREEPOST, Littlehampton, W. Sussex BN17 5BR; £3.95 ea. (plus 15% P&P if ordered direct).

Published November:

MAA 180 'Rome's Enemies (4): Spanish Armies 218BC-198BC' by Rafael Trevino, plates Angus McBride. Unusual subject, offering here a good deal of detail not to my knowledge available elsewhere in English. The bloody, 200-year wars between Republican Rome and various Iberian tribes and confederacies are described in some depth. Interesting photos of artefacts, and good line drawings. Mr. McBride is as good as he always is: but though several plates are superb (the cover is a diorama if ever I saw one), an artist is only as good as his references; and I felt Mr. McBride was being stretched unfairly on Plates B and H.

MAA 181 'Austrian Army of the Napoleonic Wars (2): Cavalry' by Philip Haythornthwaite, plates Bryan Fosten. The quality is what you would expect from this team. Fact-packed title, organised largely in same format as MAA 176 on Austrian infantry reviewed in 'MF' No. 2. Covers Cuirassiers, Dragoons, Chevauxlegers, Hussars, Uhlans, and auxiliary units; particularly useful in leading us through the very complex changes of designation and uniforms in Dragoon/Light Dragoon/Chevauxlegers branches. Brief notes on tactics, but mostly uniform and equipment details. Good monochrome pictures, mostly Ottenfeld and Tranquillo Mollo. First class plates. Recommended.

MAA 182 'British Battle Insignia (1): 1914-18', written and illus. by Mike Chappell. This is described in some detail in the preview in 'MF' No. 3; suffice it to add that the claims made for this title in that notice seem to this reviewer justified. It takes concentration to follow particular divisional practices through the tightly-integrated text, monochrome diagrams and plates commentary; but a great deal of information is packed in, and the effort is well worth it. Recommended.

MAA 183 'Modern African Wars (1): Rhodesia 1965-80' by Peter Abbott and Philip Botham, plates Mike Chappell. Good, concise summary of the course of the war; good brief details of units (and of the confusing 'alphabet soup' of guerrilla groups); good diagrams of unit insignia, stable helts, etc.; many of the photos also interesting. While the plates are well done, I was less than 100% happy with the choices; I think most readers would prefer more examples of combat dress and less of service and parade uniform. Still good value for the price, and cross-referencing between this and the 'Contact' photo-hooks will produce several interesting model ideas. Still, only two cheers for this one, by the formidably high standards Osprey have led us to expect. **JS**

'French Foreign Legion' (Uniforms Illustrated No. 15) by Yves L. Cadiou & Tibor Szeccso; 72pp; 129 illus. incl. 18 col.; and 'Modern American Soldier' (Uniforms Illustrated No. 16) by Arnold Meisner & Lee Russell; 72pp; 129 illus. incl. 17 col.; Arms & Armour Press Ltd.; £3.95 each

These two latest titles in this established paperback photo-reference series both represent good value. The Foreign Legion title covers 1940 to the present: there are about 20 photos of WWII légionnaires (including some rare and welcome shots); 24 from Indo-China; about the same number from Algeria; and the remainder, including the colour photos, are from the last two decades. There are a number of old friends here, including one or two irritatingly miscaptioned 'posed' studies; but there is still much of real interest. The captions are generally workmanlike, though not delving particularly deeply into the minutiae of uniforms. (A trivial but perhaps misleading error is the use in some of the English captions of 'OD' where 'kaki drill' or 'sand-khaki' would have been more correct.)

The American title is perhaps the best book yet in this series. The pictures have been selected by real experts, to show uniform detail clearly; and the captions are long, specific, and highly detailed. A very wide range of units and uniforms are covered, including many female

orders of dress. The cumulative impression left by a fast look through these pages is of the remarkable changes that have taken place in the overall appearance of the US soldier since Vietnam. This book is a first class reference source for modellers, artists and collectors; the authors are to be congratulated, and their inexpensive book is highly recommended. **MCW**

'Narrative of the Campaigns of the Loyal Lusitanian Legion during the years 1809, 1810 and 1811' by Lt.Col. William Mayne & Capt. Lillie; facsimile reprint of 1812 edition, by Ken Trotman Ltd., Unit 11, 135 Ditton Walk, Cambridge CB5 8QD; 346 pp; £11.50

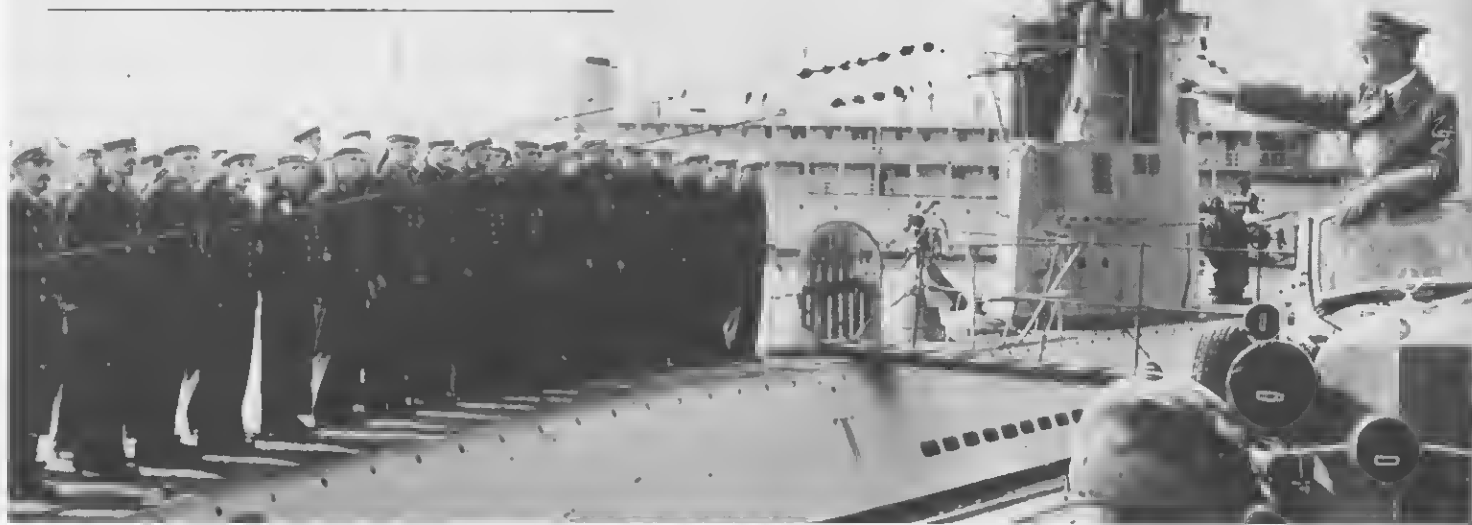
This latest volume in the Ken Trotman Military History Monograph series of reprints will be greeted with delight by Napoleonic enthusiasts.

The Loyal Lusitanian Legion was a corps formed in England from Portuguese emigrants, to return to their homeland to resist French invasion. The re-formation of the Portuguese army under British command is well-known, resulting in the Portuguese becoming 'the fighting-cocks of the army' in the Peninsula; less known is the career of the Lusitanian Legion, the first corps to integrate British officers with the Portuguese. Under the command of that 'very slippery fellow' Sir Robert Wilson, and William Mayne the author, the Legion played an important rôle in the early Peninsular War; indeed, by halting a French advance at a time when Britain was contemplating the evacuation of Lisbon, the Legion was termed 'the salvation of Portugal'. Despite the 2nd Bn. having the dubious nickname 'Baron Ehen's Runaways', the corps served with distinction until it was transferred from the British to the Portuguese establishment, and broken up to form new regiments of Caçadores (light infantry). Its final action was Albuera, where 'it may justly be said, that it gloriously died there . . . maintaining to the last, its character and renown . . .'. Perhaps its major significance was in proving 'to the Portuguese nation, and the world at large, that there was enough of the ancient spirit in the body of the Portuguese people to form a regular and efficient army, to the glory of their country and allies, and the terror of their enemies'.

The book includes extensive appendices, including the 'Private Instructions' for the British Army entering the Peninsula; on the Convention of Cintra, the death of Moore, despatches concerning Talavera, Albuera and Fuentes de Oñoro, a guide to Portugal, and much more. At £11.50 (with stiff card covers) it represents excellent value, and as usual the publishers must be thanked for making available another title which in its original edition is extremely rare. **PJH**

U-Boat Uniforms 1939-45 (1)

BRIAN LEIGH DAVIS



Few branches of Germany's armed forces can have a more convincing claim to have brought Britain close to collapse in the middle years of the Second World War than the U-Boat arm of the Kriegsmarine. Few, too, made such consistently high demands upon the skill and nerve of their personnel. Isolated far from help, crews of about four young officers and 40 to 50 ratings faced the enemy's vigilance, and the merciless oceans, for many weeks at a time. They were well aware that their individual chances of surviving the crippling of their vessel were vanishingly remote: in fact they faced a death as horrible, and as virtually inevitable, as any faced by a modern astronaut in space. A soberingly high proportion of these young men suffered that fate: 27,491 of them, in about 785 boats lost, out of some 920 boats which made at least one operational patrol.

Above:
Adolf Hitler inspecting a U-Boat crew at Wilhelmshaven, late September/early October 1939, when submariners were still to be seen wearing the brimless cap in blue or white. From the amount of script on the bands, these caps still bear pre-war flotilla tallies. There is a suggestion that this is the crew of U-29, a Type VIIA boat of the 2. U-flottille commanded by Kapitänleutnant Schuhart, which on 17 September sunk the British carrier HMS Courageous — the first major warship loss of the Second World War. Schuhart received an immediate award of the Iron Cross 1st Class, and his entire crew the 2nd Class.

From May 1943 the combination of improved Allied escort and hunter-killer group tactics; the closing of the mid-Atlantic 'air gap' by long range bombers and escort carriers; the new short wave radar, and high frequency direction finding equipment: all conspired to condemn the U-Boat arm to eventual disaster.

¹For reasons of space, the complete list of ranks and rank insignia throughout the Kriegsmarine cannot be described and illustrated in these articles; the same applies to trade and proficiency badges. Readers are directed to the present author's *Badges & Insignia of the Third Reich 1933-45* (Blandford Press, 1983).

The courage and endurance of the U-Boat crews in the second half of the war demands respect; and today — 40 years after the event — the ungrudging acclaim which has greeted the feature film *Das Boot* suggests that we are ready to take an unbiased interest in their uniforms and equipment.

UNIFORMS

The crews of U-Boats, once posted to their vessels on completion of training, were issued with two types of uniform clothing:

(a) The regular naval issue which, in one form or another, was worn by all Kriegsmarine personnel.
(b) Specialist clothing worn when on board their boats, which, while not as common as regular naval uniforms, was very distinctive, and came to be identified closely with German submariners.

The purpose of this serial article is to explain and illustrate the variety of clothing, both officially issued and extemporised, which was worn by U-Boat crews.

The regulation uniforms which were prescribed to be worn by naval personnel of various ranks were as follows — asterisks* indicate items which were normal wear for U-Boat crews:

For Ratings:

- (1) The dark blue Jumper worn with dark blue trousers*.
- (2) The white Jumper worn with white trousers.
- (3) The Uniform Jacket.
- (4) The Überzieher ('pea jacket')*.

For Warrant Officers:

- (1) The dark blue double-breasted Reefer Jacket with matching trousers*.
- (2) The single-breasted White Jacket.
- (3) The Greatcoat.

For Commissioned Officers:

- (1) The Frock Coat.
- (2) The dark blue double-breasted Reefer Jacket with matching trousers*.
- (3) The single-breasted White Jacket.
- (4) The Mess Kit.
- (5) The Greatcoat.
- (6) The Cloak.

The regulation issue working and protective clothing worn by U-Boat personnel was as follows:

- (1) The Leather Jacket and Trousers for Seamen personnel.
- (2) The Leather Jacket and Trousers for Technical Personnel.
- (3) The Brown Work Uniform.
- (4) The Denim Work Uniform.
- (5) Foul Weather Clothing.

KRIEGSMARINE RANKS AND BRANCHES

Four ranges of ranks were used within the Germany Navy:

- (1) *Commissioned Officers*, from the most senior rank of Grossadmiral down through eleven ranks to that of Leutnant zur See, plus the two junior appointments of Oberfähnrich and Fähnrich, translated for the purposes of these articles as Midshipmen.¹
- (2) *Warrant Officers* Four ranks: Stabsoberbootsmann, Oberbootsmann, Stabsbootsmann and Boatsmann.
- (3) *Chief Petty Officers and Petty Officers*, termed respectively Ober/Maat and /Maat, the exact title depending upon branch: e.g. Oberfeuerwerksmaat (chief petty officer armourer) and Steuer-mannsmaat (coxswain petty officer).
- (4) *Seamen*, from the rank of Matrosen-Stabsgefreiter through six junior ranks down to Matrose, ordinary seaman.

Personnel from all four rank ranges would be found among the crew of a U-Boat.

Kriegsmarine Officers' Branches of Service:

There were eight main branches (termed 'Laufbahnen') of officers on the active list in the Kriegsmarine:

- (1) *Executive Officers* (Seeoffiziere), designated by the suffix 'zur See' after the rank.
- (2) *Engineering Officers* (Marineingenieure), designated by the suffix '(Ing)' after the rank.
- (3) *Supply Officers* (Verwaltungsoffiziere), designated by the suffix '(V)'.
- (4) *Ordnance Officers* (Waffenoffiziere), divided into Officers of Offensive Ordnance—suffix '(W)(A)'—and Defensive Ordnance—suffix '(W)(Spr)'.
- (5) *Torpedo-Technical Officers* (Torpedotechnischer Offiziere), suffix '(T)'.

- (6) *Signals Officers*. In October 1944 the former branches of Marinennachrichtendienst (Naval Communications Officers) and Nachrichtentechnische Offiziere (Technical Communications Officers) were amalgamated into a new branch known as Signals Officers, designated by the suffix '(S)', replacing the former suffixes '(MN)' and '(NT)'.
 - (7) *Coastal Artillery Officers* (Marineartillerieoffiziere), suffix '(MA)'.
 - (8) *Medical Officers*, who bore rank titles different from those used by officers of the above seven branches.
- Of these eight categories of naval officers, only Executive and Engineering Officers were normally to be found serving aboard U-Boats.

Kriegsmarine Ratings (including Midshipmen) and their Branches:

Ratings served in a number of branches depending upon aptitude and training. The ratings' branches, also known as Laufbahnen, were usually designated by Roman numerals. Several of the following branches would be represented among the crew of a U-Boat:

- | | |
|---------|--|
| I | Seamen (Bootsmann) |
| II | Stokers (Maschinenpersonal) |
| IIIa | Coxswains, destroyers, upwards (Schiffssteuermann) |
| IIIb | Coxswains, torpedo boats. |
| IIIU | U-Boats, M/S craft respectively (Bootssteuermann) |
| IIIM | Coxswains, surveying vessels (Vermessungssteuermann) |
| IIIv | Observing Service (Beobachtungsdienst) |
| IVb | Signalmen (Signaldienst) |
| IV(sig) | Radar Operators (Funkmessdienst) |
| IVc | Wireless Transmission Operators (Funkdienst) |
| IV(Fk) | Teleprinter Operators (Fernschreib) |
| IV(Fs) | Telephone Maintenance (Nachrichtenfernsprech) |
| IVNF | Shipwright (Zimmermann) |
| V | Gunnery (Feuerwerker) |
| VI | Ordnance Artificers (Artilleriemechaniker) |
| VIIA | Electrical Artificers, Torpedoes (Torpedomechaniker) |
| VIIIT | Electrical Artificers, Mines (Sperrmechaniker) |
| VIIISpr | Supply Assistants (Verwaltungsschreiber) |
| IXVs | |

- | | |
|----------|---|
| IXSv | Stores Administration (Sachverwalter) |
| IXVp | Victualling Assistants (Verpflegungsschreiber) |
| X | Writers (Schreiber) |
| XI | Sick Berth Attendants (Sanitäter) |
| XII | Bandsmen, Musicians (Musik) |
| XIII | Chief Petty Officer (Hauptfeldwebel) by selection prior to promotion: intended for shore disciplinary duties. |
| XIV | Coastal Artillery Gunners (Marine Artillerie) |
| XV | Motor Transport Drivers (Kraftfahr) |
| XVI | Recruiting (Laufbahn für das Wehersatzwesen) |
| XVIIA | Ordnance Administration (Artillerie und Waffenwart), recruited by selection from other branches. |
| XVIIIB | Administration of Mines and Booms (Sperrwaffenwart), recruited by selection from other branches. |
| XVIIISpr | Aircraft Reporting (Flugmelde) |

Rank Insignia

With one exception noted below, rank insignia worn by members of U-Boat crews were of exactly the same design, size and colouring as those worn by all other Kriegsmarine personnel. There were three main methods of displaying individual rank: on shoulder

straps and shoulder boards; by cuff rings (colloquially known as Kolbenringen, 'piston rings'); and by arm badges. Other methods of displaying rank or rank range were collar patches, collar lace, and cap braiding.

Commissioned Officers

Rank was displayed by the design of shoulder straps, worn by U-Boat officers on shirtsleeve, denim and sometimes on leather clothing; by a sequence of cuff rings on the Reefer Jacket; and by cap braiding indicating rank range.

Midshipmen

Rank was displayed by special narrow shoulder cords worn on the same range of clothing as the officers' shoulder straps; and indicated by the use of officer-style branch badges on the cuffs of the Reefer Jacket (see below).

Warrant Officers

Rank range was displayed by the use of shoulder boards, and ranks by applied metal stars, on clothing as above, and also on the Reefer Jacket.



Above:

The coxswain — Obersteuermann — of a U-Boat takes a noon sight with the sextant. Note shoulder boards of rank attached to his working denims; and the patent leather peak of his cap.

Left:

Improvised metal collar 'braiding', as worn on working and sometimes on leather clothing by Petty Officers and Chief Petty Officers.

Right:

Home from a patrol, the crew of a U-Boat catch up on the latest news. The Army mountain troop's Edelweiss badge sewn to the left side of the Bordmütze identifies U-124; it was one of a wide range of non-regulation insignia adopted by crews of individual boats or, as was more frequent later in the war, by a whole flotilla. These badges were tolerated, as being good for morale and esprit-de-corps. They very often matched insignia painted on the boat's conning tower. U-124, commanded by Kapitänleutnant Wilhelm Schulz and later by Kapitänleutnant Johann Mohr, was a Type IXB boat based at Lorient with the 2.U-flottille. It was the fourth most successful boat of the war. (These individual U-Boat badges will be the subject of a more detailed article in a future issue.)

Above right:

Officers, too, frequently wore boat badges, usually attached to the front left side of the band of the Schirmmütze. They were usually produced on board, or in shore workshops, from scrap white- or yellow-metal sheet, although some were coloured; and a few — like the two illustrated in this article — were regulation Army insignia. This death's-head appears to be that officially worn as an additional tradition badge by elements of the 17. Infanterie-Regiment and 13. Kavallerie-Regiment in commemoration of the Brunswick insignia of the Napoleonic Wars. Here it is believed to be worn by Korvettenkapitän von Mannstein, commander of U-753, a Type VIIC boat of the 3.U-flottille at La Rochelle. He is being interviewed by a Japanese radio reporter; note the Kriegsmarine War Reporter in the middle, with anchor devices set on the corners of his collar.

Right centre:

Oberleutnant zur See Jobst, commander of U-2326, salutes as he surrenders his boat in Loch Foyle, Scotland, on 14 May 1945. U-2326, one of the latest Type XXIII 'Elektroboot' design, was one of six at sea in British waters when the war ended. It is noticeable that while Jobst wears the U-Boat War Badge awarded for at least two patrols, his First Watch Officer at left (IWO, pronounced 'Eins-WO') does not. Both officers wear the grey-green work denims, Jobst over the dark blue issue sweater with a fall collar and buttoned neck.



Chief Petty Officers and Petty Officers

Badges of rank and branch combined were worn on the upper left sleeve of the Jumper uniforms and the Überzieher; rank range was indicated by collar lace, and rank by collar patches, on the Überzieher. The arm badges took the basic form of an anchor, combined with the appropriate branch emblem, for Petty Officers; and the same above a small chevron for Chief Petty Officers. These badges were embroidered in yellow thread on dark blue oval patches; for use on the Überzieher only, gilt metal versions could also be privately purchased.

One unusual form of rank range insignia, which photographs show to have been widely favoured by U-Boat personnel of these ranks when serving on board, was displayed on the collar points of work and (less frequently) of leather clothing. It is not known who first devised it or

when it was first used, but it was probably first produced on a boat at sea. Metal chevrons, cut from thin aluminium sheet and punched to take stitching, were sewn to the collars in imitation of collar lace. They seem to have been most popular on Denim Work Uniform. (But at least one published photograph shows Petty Officers of a crew returning from patrol sporting what seems to be a version of conventional collar lace all round the collars of their denim blouses.)

Seamen's Ranks were displayed in the form of chevron badges on the upper left arm of the Jumper and Überzieher, in yellow or gold on blue uniforms; and rank range by collar patches on the Überzieher.

Examples of rank insignia will be found in the illustrations, and further details will be found in the sections on the various specific uniform items.

Branch Badges

Branch badges were worn throughout the Kriegsmarine by all ranks:

Commissioned Officers wore small gold embroidered devices on the cuffs of their Reefer Jackets above the sleeve rank rings. The Executive Officer branch wore a five-point star; the Engineer Officer branch, a six-spoked cogwheel. In branches other than the Executive these devices also appeared as small gilt metal emblems mounted centrally on the shoulder straps.

Warrant Officers displayed small gilt metal emblems of their branch centrally on their shoulder boards.

Midshipmen wore embroidered branch emblems stitched to the forearms of their uniform tunics in the same way as commissioned officers. In branches other than the Executive they also displayed gilt metal emblems mounted centrally on their distinctive narrow, silver-coloured shoulder cords.

Chief Petty Officers and Petty Officers wore — as mentioned above — combined badges of rank and branch on their left upper sleeves.

Seamen wore embroidered emblems of their branch of service on circular cloth patches sewn to the left upper sleeve of Jumpers and Überzieher, above any badges of rank. Those rates identified by chevrons wore insignia combining the branch device with the chevrons.

Proficiency Badges

Seamen, Petty Officers and Chief Petty Officers with specialist skills wore emblems distinctive of their proficiency, often incorporating small chevrons to indicate grade achieved, on the left sleeve of their Jumpers and Überzieher below their Laufbahn emblems and rank badges. These specialist badges were worked in red on (for blue uniforms) blue oval patches. More than one might be worn.

AWARD BADGES

There were only three basic War Badges (Kriegsabzeichen) that could be awarded to U-Boat personnel, and of these three badges there were two further variations. Despite this seemingly meagre provision, this was in fact a larger number than that available for award to any other branch of the Kriegsmarine; and considering the relatively small size of the U-Boat arm, this is a reflection of the efforts and achievements of U-Boat personnel.

The U-Boat War Badge (U-Boots-Kriegsabzeichen)

A War Badge for German U-Boat crews had first been instituted by Kaiser Wilhelm II in January 1918. On 13 October 1939 the badge was re-instituted by Grossadmiral Raeder with the approval of Adolf Hitler.

Officers, Warrant Officers, Petty Officers and Seamen who had completed two operational sea voyages were eligible for the award of the badge; the two-patrol requirement might be waived in the case of personnel wounded during a patrol. The decision to present the Badge rested with the boat commander. The Badge was in one class only — gilt. (Early specimens were made of bronze metal; later issues of zinc with a gold wash.)

On the 1939 award the Nazi eagle and swastika National Emblem replaced the former Imperial Crown, and the U-Boat — shown in profile and surrounded by a laurel wreath — was of more modern design. The Badge was worn pinned to the Reefer Jacket, the White Jacket, the blue or white Jumper, the Überzieher and the working blouse at the base of the left breast pocket or in the equivalent position on those garments without breast pockets. Where the pin-back Iron Cross 1st Class was also worn, the War Badge was worn below it.



The U-Boat War Badge with Diamonds (U-Boots-Kriegsabzeichen mit Brillanten)

There were two other versions of the U-Boat War Badge:

- (1) A unique version awarded by Grossadmiral Raeder, as Commander-in-Chief of the German Navy, to Admiral Karl Dönitz, commanding admiral of the U-Boat arm. It was of the same design as the gilt metal U-Boat War Badge, but in solid gold, and with small diamonds set into the arms of the swastika and around the wreath. Dönitz was the only recipient. He always wore it above his Iron Cross 1st Class rather than in the conventional position below the medal.
- (2) A small number (exactly how many is not certain, but, it is thought, at least 29) of a special gold-plated silver U-Boat War Badge were manufactured and awarded late in the war. Each arm of the swastika was set with two small diamonds, and a single diamond was set in the centre of the swastika — a total of nine Brillanten.

This version was instituted by Grossadmiral Dönitz for

Above left:

A U-Boat Kapitänleutnant wearing, on his left breast from top, the U-Boat Combat Clasp in silver; the 1939 Iron Cross 1st Class; the U-Boat War Badge; and — presumably from a previous posting — the High Seas Fleet War Badge awarded to personnel of major surface vessels. Below the National Emblem on his right breast is the German Cross in Gold in the cloth version. The ribbon of the 1939 Iron Cross 2nd Class is worn through the second buttonhole of his Reefer Jacket.

Left:

Grossadmiral Karl Dönitz. Clearly shown is his unique U-Boat War Badge in gold set with diamonds, worn above his Imperial German Iron Cross 1st Class with its Third Reich 'bar', and below these his Imperial German U-Boat War Badge.

Right, top to bottom:

Schirmmütze with peak braiding for ranks of Leutnant z.S., Oberleutnant z.S. and Kapitänleutnant.

Schirmmütze with boat commander's white cover, gilt metal National Emblem, and peak braiding for ranks of Korvettenkapitän, Fregattenkapitän and Kapitän z.S.

Schirmmütze with peak braiding for ranks of Kommodore and admirals.

Blaue Mütze separated to show two-part construction. The white-covered stiffener rising from inside the front centre of the band kept the front of the 'beret' upright, for smartness and to display the badge.



U-Boat commander Korvettenkapitän Gysae, a holder of the Knight's Cross with Oakleaf cluster, photographed at the periscope late in 1943. This clearly shows the Schirmmütze of his rank with the commander's white cover; note also shoulder straps attached to his denim blouse.



Right:

Representative selection of Kriegsmarine insignia:

- (1) Issue-quality National Emblem worn on right breast of blue jumper and Überzieher by all ranks below Leutnant.
- (2) BeVo-quality National Emblem for ratings, on its original backing.
- (3) Combined branch and rank insignia worn on upper left sleeve of blue uniforms by Able Seaman Torpedo Artificer. Issue chevrons were in yellow felt; this flat gold braid example is of private purchase quality.
- (4) Issue-quality combined branch and rank insignia worn on upper left sleeve by Signals Chief Petty Officer.
- (5) Combined branch and rank insignia for Gunnery Petty Officer. This private-purchase quality gilt metal version was for wear on the Überzieher ('pea jacket') only. It is mounted on an oval of dark blue cloth with a metal backing plate.
- (6) Specialist/proficiency badge, as worn on the left sleeve below branch and rank insignia, in this case by a 1st Class Motor Engineer. This category of insignia was always worked in red, on either blue or white backgrounds for winter blue or summer/tropical white uniforms respectively.
- (7) Warrant Officer's shoulder board, in this case for a Stabsobermaschinist. All grades of this rank range wore the gold-braided shoulder boards, rank being indicated by the number and position of the silver stars, and branch by the gilt emblem.
- (8) Shoulder cord for a Midshipman of the Executive branch.
- (9) Shoulder strap for a Leutnant z.S. of the Executive branch. Single and double gilt stars identified the ranks of Oberleutnant z.S. and Kapitänleutnant.
- (10) Shoulder strap for a Korvettenkapitän of the Executive branch. Single and double gilt stars identified the ranks of Fregattenkapitän and Kapitän z.S.
- (11) The U-Boat War Badge.
- (12) The U-Boat Combat Clasp in silver.

(All colour photographs, Michael Dyer Associates)

award to U-Boat commanders who were already recipients of the Knight's Cross of the Iron Cross with Oakleaf cluster, and who continued to demonstrate exceptional bravery in the face of the enemy. This version, too, was worn above the Iron Cross 1st Class on the left breast.

The U-Boat Combat Clasp (U-Boots-Frontspange)

The need to distinguish those crews of U-Boats who had carried out large numbers of operational patrols resulted in the institution on 15 May 1944, at the direction of Grossadmiral Dönitz, of a special U-Boat Combat Clasp in bronze. (The other armed services had already

established precedents for this type of award.) Award was on the recommendation of the U-Boat commander, approved by Grossadmiral Dönitz. Award was based both upon the number of operational voyages undertaken and upon the degree of



danger involved and the personal courage displayed; it was thus much more a question of individual conduct and judgement than in the case of the War Badge.

The Clasp consisted of a small and somewhat simplified version of the U-Boat

War Badge supported on each side by horizontal 'wings' made up of three rows of oakleaves; a pair of crossed swords was added to the lower central part of the laurel wreath surrounding the U-Boat. The Clasp was worn above the left breast pocket

and above any medal ribbon bar, where this was worn.

A higher grade in silver-coloured metal was instituted on 24 November 1944, presumably to reward U-Boat personnel for even greater numbers of operational voyages or for particularly daring

endeavours. A gold version is thought to have existed, but there is no known record of its ever having been awarded.

Both the U-Boat War Badge and the U-Boat Combat Clasp could be, and often were, awarded to an individual and worn together.



Officers of U-249 with their commander, Kapitänleutnant Kock (in white-covered cap, back to camera) after this Type VIIC boat of the 5.U-flottille surrendered to the British at Portland in May 1945. All wear U-Boat leathers except for the Lieutenant at right, in grey-green working denims. Note the rear details of Kock's leather coat, e.g. the sewn-in half-belt.

This photo clearly shows the naval officer's Schirmmütze, which is strikingly different in outline from the peaked caps of other services. The young Lieutenant in the centre is wearing the version with a patent leather peak, as worn by Midshipmen and Warrant Officers; but a strip of sheet brass 'braiding' appears to have been added, to up-grade it — perhaps marking promotion while at sea?

HEADGEAR

The Naval Peaked Cap (Schirmmütze)

The peaked cap was an issue item for wear by naval personnel from the rank of

Fähnrich up to and including Grossadmiral. It differed from the caps worn by other organisations both in its shape, and in the fact that it did not feature coloured or metallic piping as indicators of branch of service or rank range.

All caps consisted of a fairly large crown or top of dark navy blue Melton cloth; a black mohair band; and a stiff peak. For Midshipmen and Warrant Officers the peak was in black patent leather with a narrow stitched edge. For all ranks above this the peak was covered in the same dark blue cloth as the crown.

The ranks of Leutnant zur See, Oberleutnant zur See and Kapitänleutnant were distinguished by a narrow, solid, 7 mm-deep band of gold braiding running round the edge of the peak, scalloped along its inner edge. The ranks of Korvettenkapitän, Fregattenkapitän

and Kapitän zur See wore a single row of interlocked gold-embroidered oakleaves, approximately 8 mm deep, round the edge of the peak. The rank of Kommodore, and the five grades of admiral's rank, were distinguished by a second row of oakleaves.

White linen covers were worn on the cap during the summer months (April to September) each year, and when the cap was worn in the tropics. Some caps were manufactured with a fixed white top, but the removable white linen cover was a cheaper and more convenient method.

It was, however, a rule that commanders of U-Boats, when under operational conditions, always wore a white cover on their caps regardless of season or geographical location. This was done in order to make the commander easily recognisable to

other crew members at all times, given the low light conditions inside an operational U-Boat.

The cap insignia were of the same design and colouring for all peaked caps. On the band was set a wreath of oakleaves, open at the top, in either gold bullion thread or — as an economy version — in yellow thread. Set in the centre of the wreath was the national cockade in black, silver and red (centre), embroidered in bullion thread as a raised circular boss. Sewn to the front of the crown above the wreath and cockade was the eagle and swastika National Emblem, usually embroidered in gold bullion thread. Where a removable white cover was used a pin-back gilt metal National Emblem was substituted.

The chin strap was the same for all ranks, being in black leather and attached by two small gilt buttons.

The Brimless Naval Cap (Blaue Mütze)

The brimless cap was worn by all grades below the rank of Warrant Officer until 1939. Thereafter it was generally kept for shore leave and ceremonial duties (although some photos taken early in the war confirm its continued use for some months aboard U-Boats at sea).

The cap was made in two parts: the upper part being a shallow cloth 'beret'; the lower part, in effect, a 5 cm-deep stiffened dark blue cloth oval ring. The crown or 'beret' appeared in interchangeable dark blue Melton cloth or white linen versions. The rim of the crown was gently stretched over the upper rim of the stiffened band until the edge of the crown engaged in a groove just below the upper edge of the band. When correctly assembled the whole gave the appearance of a single item. The design allowed for the change-over between the dark blue top worn during winter months in home waters and temperate climates, and the white top worn during the summer (20 April to 20 September) or when in the tropics.

The National Emblem and the Reichskokarde, in gilt metal and black/silver-white/red metal respectively, were constructed as a single badge linked by a shaped strip of brass sheet invisible from the front, and were pinned to the front centre of the crown part of the cap.

The headband of the cap had a 3.3 cm-deep section over which was laid the naval cap tally. This black silk ribbon, 3.2 cm deep and 116 cm long, was secured to the band of the cap by being slipped under a series of black cotton threads. These held the ribbon to the sides of the cap band; and at the rear centre an arrangement of vertical and diagonal threads retained the ribbon and held the folded-over ends in such a way that they lay flat down the wearer's back.

Cap Tallies (Mützenbander)

Tallies worn during the period of the Third Reich

were, almost without exception, of one style: a black silk band with machine-woven gold wire Gothic lettering. A second type with machine-woven yellow silk lettering had the advantage of not tarnishing in salt-laden air.

Pre-war cap tallies displayed either the name of the vessel on which the seaman served; the title of the shore establishment at which he was based; or — where the vessel was too small to have an individual name — the word 'Kriegsmarine'.

There were no tallies for individual U-Boats. Pre-war cap tallies worn by U-Boat crews bore the name of the Unterseebootsflottille at Kiel or Wilhelmshaven to which the boat was assigned. Other designs of tally were worn by personnel whose duties involved supplying and servicing the U-Boat arm, and by personnel undergoing training as submariners. The following examples of tally lettering have been listed from items in collections — others may exist:

'Unterseebootsflottille	
"	Weddingen'
"	Saltzwedel'
"	Lohs'
"	Emsmann'
"	Hundius'
"	Wegener'
'Unterseebootstender	
"	Acheron'
"	Mosel'
'Unterseebootsbegleitschiff	
"	Saar'
"	Donau'
"	Memel'
"	Weichsel'
"	Lech'
"	Isar'

'Unterseebootsschule'

'Unterseebootshalbflottille'

'Unterseebootabwehrschule'

With the outbreak of war and the obvious need for security, U-Boat personnel adopted (though not universally and immediately) the 'Kriegsmarine' tally as a general service insignia.

The Naval Forage Cap (Bordmütze)

Although the brimless cap had been worn by U-Boat crews at sea throughout the First World War, it was decided in 1939 that a more

practical form of headdress should be issued for wear under operational conditions in modern submarines. The naval Bordmütze was a 'fore-and-aft' sidecap in dark navy blue material; it was popularly known as 'Schiffchen' or 'little boat', from its shape. This cap was available for wear by all ranks.

The cap insignia consisted of a yellow machine-woven National Emblem on a dark blue background, worn on the front of the upper portion of the cap. Below it, on the front of the 'curtain' or turn-up

portion, was a machine-woven Reichskokarde on a diamond-shaped dark blue background.

A white version of the Bordmütze was produced, with the National Emblem in dark blue; although this was worn by personnel of surface vessels serving in tropical waters it is not believed that it was used to any significant extent by U-Boat crews: photographs are very rare.

The cap worn by officers was distinguished by the addition of gilt-thread piping running around the top edge



Above:

Cheerful ratings from the Technical branch of the crew of Günther Prien's U-47, decorated on their return from sinking the battleship HMS Royal Oak in Scapa Flow on 13 October 1939. They wear not only the brimless cap, but also the tally of 'Unterseebootsflottille Wegener'.

Left:

The white-topped brimless cap worn by the cook of U-27 during a pre-war cruise, complete with the tally of 'Unterseebootsflottille Saltzwedel'.



¹The honour titles were the names of First World War U-Boat heroes. On the outbreak of war they passed out of general use, these flotillas being known respectively as simply 1., 2., 3., 5., 6., and 7. Unterseebootsflottille.



A typical 'homecoming'; U-Boat crews were always assured of a rousing welcome, particularly if they had had a successful patrol. Bands played, fruit and flowers were presented, salutes were thrown and decorations awarded. Shore-based naval personnel, Party officials, and — particularly — the prettiest available members of the women's services were all on hand to greet the returning heroes. As the war dragged on this kind of celebration sounded increasingly hollow, until the time came when crews were glad simply to get home alive. Note, left, the officer's version of the Bordmütze.

of the curtain; and by a National Emblem in gilt wire instead of yellow thread. Photographs show that very

many U-Boat officers in fact wore the ratings' version of the cap when at sea.

The Wool-Knit Cap (Wollmütze)

This was an item of official-issue headdress worn by U-Boat personnel at sea or when working on their boat ashore. It was a close-fitting watch cap of thick dark blue knitted wool with a distinctive woollen 'bobble' at the apex, and was usually worn with the rim turned up.

The knit cap was ideal for wear under the sou'wester — an item which will be described in a subsequent article under the heading of Foul Weather Clothing. [M]



Right:

A survivor from the U-175 about to be rescued from the Atlantic by the US Coast Guard cutter Spencer, which sank his boat in April 1943. He wears the woollen issue watch cap; and also the fully inflated U-Boat escape apparatus.

To be continued: Future articles will describe and illustrate service uniforms, and working and protective clothing.

Acknowledgements:

The author is grateful to Ken Green for his assistance in preparing the illustrations for this article.

British Mercenaries in the Baltic, 1560-1683 (1)

RICHARD BRZEZINSKI
Paintings by RICHARD HOOK

The expression 'to catch a Tartar', meaning to bite off more than you can chew, was once fairly common usage in Britain. It originated in the story of an Irish soldier in a now-forgotten battle in Eastern Europe, who called out to his comrade that he had caught a Tartar. 'Bring him along, then!' 'He won't come!', replied Paddy. 'Then come along yourself,' his comrade retorted. 'Arrah,' cried Paddy, 'but he won't let me!' Tartars and Irishmen may seem an unlikely combination to meet on a battlefield; but in little-known European wars of the 16th and 17th centuries not only Irishmen, but Englishmen, and particularly Scots, fought in substantial numbers.

Most popular was service in the Swedish army: this will be considered in Part 2 of this article. Perhaps more exotic, and certainly less well known, was their service in the army of Poland-Lithuania — at that time one of the largest and most powerful states in Europe, whose history seems sadly to have been overlooked by the mainstream of Western scholars.

The period 1560-1683 in Poland was a time of almost continuous warfare. Only occasionally did these wars spill over into the West, to become part of more generalised conflicts such as the Thirty Years War (1618-48) and First Northern War (1655-60).

There were two main theatres of conflict: the Baltic and the Ukraine. In each of these there was a three-way power struggle: in the Baltic, between Poland-Lithuania, Sweden, and the newly emerging Russia; and in the Ukraine, between Poland, Muscovite Russia and Ottoman Turkey. Besides these, there were incessant raids by the Tartars,

and revolts among the irrepressible Zaporozhian Cossacks, both of which often sparked off full scale wars.

With such preoccupations in the East, Poland's relations with the West grew less important; but she was never as isolated from the West as people imagine today. Seventeenth-century diplomats and travellers noted that Poland was full of foreigners; and many of them were Scots, who found Poland an ideal place to trade and settle. The Scot William Lithgow,² in his detailed travel book, gave only the briefest description

of Poland, thinking it quite unnecessary 'to preamble through any more particulars of this familiar nation to us'. A recent study³ estimates the number of Scots in Poland at the beginning of the 17th century at an astonishing 37,000.

The movement of these mainly poor people from Scotland went by largely unnoticed, for, as the British Agent in Poland arrogantly observed, they were 'for the most part Heightlanders men of no credit, a company of peddling kuaves'.⁴

A large proportion of British troops in Poland seem to have been recruited from local Scottish settlers; initially, however, they seem to have been imported directly from the West in fully-organised military units.

STEWART'S REGIMENT AT DANZIG

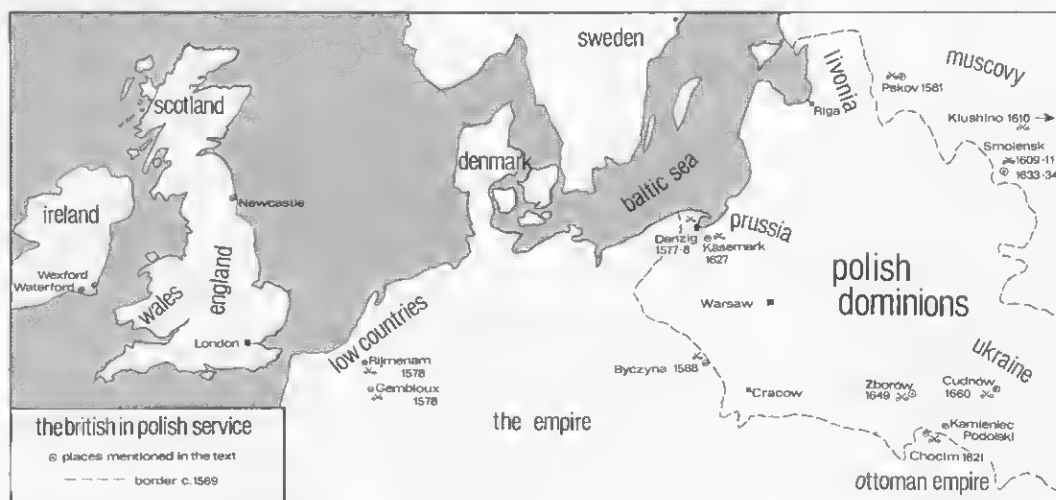
The first sizeable contingent of British troops in Poland were six companies of Scottish infantry, numbering about 700 men, hired to the City of Danzig in 1577. They had previously been serving in the rebel army in the Netherlands, but 'in default of wages, had endured poverty and hunger, whereby many perished'. They were commanded by Col. William Stewart of Houston, whom one Danziger described as 'a handsome and imposing warrior of royal blood'.⁵ The Frenchman Mauvissière was rather less complimentary, calling him 'a poor Scottish adventurer' with a passion for money-making. According

to Calderwood, he 'was as is constantly reported a clouter of old shoes'. Yet, despite his plebeian background, he rose through the ranks, 'first as a soldier, then as a captain, and last as a colonel'.⁶

At this date Danzig was the largest and by far the wealthiest town in the Polish Republic; its position at the mouth of the Vistula gave it total control over the Polish grain trade. The city's mainly German-speaking population had ideas of breaking away from Poland and joining the Holy Roman Empire. In view of the city's importance the king of Poland, Stefan Batory, could hardly allow this to happen. In July 1576 civil war broke out between Danzig and the Polish Crown.

Among the new troops raised to replace early losses were William Stewart's Scottish companies. English State papers mention that these few Scots were the Danziger's 'chief stay in all their troubles. They have done such noble service that they have got great fame for their country in these parts.'⁷ Peace was eventually signed in the spring of 1578, without the walls of Danzig ever being breached.

The Scots did not escape without casualties, however. We read that in one skirmish near the vital 'Lantern' fortress guarding the mouth of the Vistula, which was garrisoned by the Scots under a ruinous bombardment, the 'brave Captain Robert Gourlay' was wounded under the arm and, trying to jump to a boat, lost his footing and



Ensigns of William Stewart's Scottish Regiment, 1578. Once identified as copies by William de Gortier not earlier than the 1620s, these miniatures are now thought to be originals dating from 1578-84.²⁶ De Gortier obtained the MS later, and 'improved' it with some of his appalling poetry. While some details may apply specifically to the Netherlands rather than to the Danzig campaign, they must give a fairly good idea of the regiment's appearance in 1577.

Folio 4 (far right) shows an ensign at the right carrying the white/blue/orange colours of the Dutch rebels, an orange wavy band at the top; this may indicate that the flag is not from Stewart's regiment, and it certainly would not have been carried at Danzig. It would, however, be appropriate for any troops in Dutch service; and the folio is clearly marked 'Coronel Stuwaert Schotz'. The officer's hat is dark grey, the band white; the doublet is white, slashed and pinked; the splendid breeches are of quilted crimson-brown silk finished with a picadil border and secured by scarlet knee ribbons. His stockings are mid-blue, his shoes buff.

On the left is an ensign in a dark grey hat; a sleeveless jerkin and matching breeches in buff with silver decoration; under the jerkin a blue-grey doublet with silver hooped lace decoration on the sleeves; orange stockings and black shoes. He carries a flag in black/light grey/white stripes. (All copyright Royal Library Albert I, Brussels)

fell in the water, where his heavy armour dragged him under to his death.

Organisation and equipment

The organisation of one of William Stewart's companies is not easy to determine, even though accounts for their pay in the service of Danzig are still preserved.⁸

Aside from officers, the bulk of the men seem to have been paid a flat rate of five thalers per month. This contrasted with the terms agreed for German troops, who tended to have a graded pay scale depending on experience and equipment. Bornbach's relation of Capt. Gourlay's funeral talks of 'all the Scots with their arquebuses' and drums; there are no references to pikes, bows or bagpipes. Neither are there any references to purchases of pikes or armour, despite a large number of recorded purchases of arquebuses of various types, including some bought en route at Lubeck. It is quite likely that in the type of fighting that was expected of them — defending walls — pikes would not be very useful; and perhaps the Scots were equipped only with firearms?

In Netherlandish service, however, Stewart's men



were not uniformly equipped. In 1575 Stewart sent to England for 200 calivers (arquebuses) and 100 armour corselets to equip 300 men — a clear indication of the 2:1 ratio of 'shot' to 'pike'.⁹ A Commission¹⁰ for Stewart's Regiment in Holland in 1579-80 shows the following recommended structure for a company of 150 men:

- 1 Captain
- 1 Lieutenant
- 1 Ensign
- 2 Sergeants
- 4 Corporals
- 1 Furier (master of provisions) or Clerk
- 2 Drummers
- 1 Chirurg (barber-surgeon)
- 75 men armed with arquebuses
- 12 men armed with muskets

Thus the officers and 'shot' together made up 100 men, the remaining 50 being pikemen.

It is not entirely clear what

the average 'Jock' was wearing on service in Danzig, but several clues point to the fact that many wore fairly traditional clothing. Some of the troops arrived in Danzig at irregular intervals after the first main contingent, and these probably came direct from Scotland, in which case they are unlikely to have been uniformed. At the battle of Rijmenam, only a few months after the Danzig campaign, Faminio Strado noted that some of the Scots (among them Stewart's regiment) stripped to their shirts, some of them casting off these too, and tied them about their middles. A Polish source, Spytek Jordan,¹¹ one of Batory's best officers, wrote of the Scots: 'Though they dress modestly . . . they are exceptional infantry, even if they appear to our eyes improper.' The chronicle of the Danziger Bornbach also makes references to 'the poor Scots'. Taken together, these com-

Folio 10 (right) is dated August 1578: 'Scottish Ensigns then in camp at Rijmenam, who piously risked their lives against Don Juan.' The figure on the left bears a Barry flag of blue and white, with plum-coloured tassels. The central device has a blue field, and arms as follows: Quarterly, 1st & 4th Argent a lion rampant Sable; 2nd & 3rd Gules a lion Argent. Crest: a dexter arm erect holding a sword Argent. The helmet is silver with gold fittings; plumes, red and white; supporters, yellow. These are the arms of Wemyss; Finlayson notes that James Wemyss of Caskiebenran had several sons who went to Flanders at about this time.

The ensign wears a green hat, the underside shown red, with a white band. The white jacket has pale olive slashing and pinking; the breeches are pale plum; the stockings mid-blue, and the shoes yellow.

The figure on the right has a flag with buff and white zig-zag stripes and — interestingly — a white St. Andrew's Cross. The buff central field bears arms as follows: Gules a lion rampant (or passant) Argent; on a chief Azure (? actually painted buff) two stars Argent. Crest: three ostrich feathers, one Gules between two Argent. Other details as above. These are the arms of Thomas Newton, awarded 19 November 1577.

The ensign wears a pale plum hat, the underside green, with a buff band; buff doublet or jerkin, unfastened at the bottom, with similar coloured but slashed sleeves; blue breeches with white decoration; buff stockings, and black shoes.

Folio 5 (centre right) shows two ensigns identified as those of 'Captain Bleyre and Capitain Gordon', who are mentioned in the regiment's rolls in Flanders in 1578. That on the left is illustrated in Richard Hook's colour reconstruction; note that the tassels are silver-coloured. The man on the right has a Barry flag of dark blue and gold with a white diagonal bearing black lettering, and a small arm proper, with white sleeve and silver sword. The finial is gold, the tassel blue. The man wears a black hat; crimson velvet doublet and breeches with gold buttons; tan-yellow stockings, and black shoes.

English, Dutch, French, and Spanish to show foreign powers just how far his fame had spread.¹⁸ He immediately approved the levy, and agreed to finance the raising and transportation costs.

Ossolinski was concerned that if the force were to be raised from all corners of the British Isles this might cause problems. The curious idiosyncrasy of the Scots, in particular, in refusing to be led by anyone except another of their own nation (or prefer-

ably clan) was well known even in Poland. The Scots refused outright to be led by the Englishman, Aston; while the English and Irish for their part refused to listen to a Scot! Ossolinski's choice was cast in favour of the Irish, for in his opinion: *'The Irish were the best and most enduring, also the fact they are of the Catholic faith, the more easily they can be trusted.'*¹⁹

In a short time the force was ready, and sailed with Col. Aston commanding — but with a conspicuous lack of Scots.²⁰ Some 960 men sailed from London, 240 from Newcastle, and from the Irish ports of Waterford and Wexford a further 810. Aston later claimed that he had 800 more waiting in Ireland, but had been unable to find shipping for them.

The laden ships reached the Danish Sound, the narrow channel between modern Denmark and Sweden, only to be refused passage in case the troops be used against Sweden. Somehow, 300 men in the one ship under Aston's son (confusingly also called Arthur) managed to obtain permission to pass, but the rest were turned back. This first detachment arrived in September 1621. Only after several months delay, with the bulk of the force now dispersed, did Col. Aston successfully bring his own company into Danzig harbour; but by this time the Turkish War had come to an end without James I's expeditionary force ever firing a shot.

In one way they had served their purpose, however, for the fact that British help was on its way became known to the Turks, and the strength of it was greatly exaggerated. The Turks had had so much trouble with the small Polish and Cossack armies that they deemed it wiser to conclude a truce before the British 'army' arrived.

In fact, there were probably more British troops already serving with the Polish army than in Aston's relief force. One Peter Lermonth had been given commissions to raise 900 infantry from

among 'vagabonds and unpropertied Scots resident in Poland'.²¹ Prince Vladislaus, Sigismund's heir, who was present during the campaign, also had a bodyguard of Scots and Irish.

Arguments between Ossolinski and Aston went on for years while the English and Polish treasuries tried to clear up what had happened to £2,300 lent to one of them for covering the costs of the troops after they had landed in Poland. Aston, for his part, alleged of Ossolinski: *'I saw him lay it out in England for plate and jewels, and hangings and other things for his own use.'* Certainly, the sum never reached the soldiers: for several weeks they had to resort to begging and robbery, while encamped miserable and hungry in the landing area awaiting further instructions.

Ironically enough, the new British arrivals under the younger Aston were immediately sent to Livonia, where they distinguished themselves on numerous occasions, over several years, fighting against none other than the Swedes. Though the elder Aston died shortly afterwards (1624) in Denmark, the younger went on to enjoy quite an eventful career. In 1627, in an action at Käsemark²² not far from Danzig, he was captured by the Swedes along with the colours of the King's Footguard (see colour plate).

Aston went on to serve in the army of Gustavus Adolphus of Sweden; and played an important part in the English Civil War. The barbaric cruelty he had learnt in the wars on the Continent made him greatly feared by the enemy, and less than popular with his own men. (He was described as 'having the good fortune to be very much esteemed where he was not known and very much detested where he was'.) He served as a Sergeant-Major-General of Dragoons in the Royalist army, and subsequently as governor of Reading and of Oxford. Pensioned off, to general relief, after losing a leg in a stupid

accident, he was finally killed when Cromwell stormed Drogheda: traditionally, by having his head beaten in with his own wooden leg.

Aston was the archetypal mercenary; as Clarendon later remarked, he was *'a man of a rough nature, and so given up to an immoderate love of money that he cared not by what unrighteous ways he exacted it.'*²³

LATER MERCENARIES

With reforms in the Polish army after the Swedish war, large numbers of foreign infantry were no longer needed and from 1634 we rarely hear of any completely British units. One notable exception was a bodyguard kept by the wealthy Radziwill family, numbering several hundred men raised from well-bred Scotsmen resident in Poland. This unit was in existence as late as 1653.

Many Scots who served in Poland after the English Civil War were Royalists who chose *'rather to go abroad, though in a very mean condition, than live at home, and they did not much care who they were fighting against'*. Among these were two Gordons who both reached high rank in the Polish army commanding German Reiter regiments: Lt. Col. Patrick Gordon 'of the Steelhand', and Col. Henry Gordon, youngest son of the ill-fated Marquis of Huntly.

Along with yet a third Gordon — Patrick Leopold of Auchleuchries — they were wounded in the 1660 Cudnow campaign, fighting the Muscovites. Patrick Leopold was perhaps the most interesting of the three. The diaries of his adventures in foreign service are some of the most detailed and amusing accounts of the Eastern wars available even to the Slavonic historian. In later years he left for Russia; and though at first he hated it, and had to be forced to stay, he made the most of his situation, rising to the rank of general, and becoming right hand man to Tsar Peter the Great.

The highest reward for good service in Poland was



Lowland (above) and Highland (below) Scots; from *Omnium Fere Gentium*, with epigrams by Joannes Slnperius, published in Antwerp in 1572. These are included — apart from their entertainment value — as prime examples of the appalling results of trying to reconstruct costumes from, probably, written descriptions only. If the author had waited a few years he would have had the chance to see the Scots of Stewart's regiment at first hand in Flanders. As it is, the Lowlander has what could be tartan trews, but the rest of his costume seems to bear no relation to reality whatsoever. The Highlander, apart from the bow, blanket and helmet, seems dubious at best. (University Library, Warsaw)





the *Indygenat* — honorary nobility. Many soldiers received this laurel, among them Henry Gordon. Later it was a condition of receiving the *Indygenat* that the recipient had to serve in the army as an hussar, providing for himself the full equipment and train of a hussar companion — a commitment costing no small sum. One Scotsman at least was serving as an hussar in Sobieski's army when it became famous for its part in the relief of Vienna in 1683: this was John James Gordon, who held the elevated rank of Equerry (Stablemaster) in Sobieski's court. Another Scot who fought at Vienna in the Polish army was the lieutenant-colonel of Frederick Gröben's infantry regiment, George Guthrie. In fact, Sobieski once had an Englishman as his doctor for a short

Above:

Lucas de Heere's Irishman, Englishman and Scotsman, painted in watercolour by the Flemish artist and port not later than 1584. De Heere was in Britain for a time during the 1570s, and was commissioned by an unidentified nobleman to paint costumes of the world.

The Irishman (**left**) wears a middie blue blanket as a cape. Under this is a long, loose, saffron yellow shirt, belted at the waist. Over the shirt he wears a very short, faded pink jacket with tight sleeves. His sword has a white metal hilt, and a yellow metal scabbard trimmed with brown.

The Englishman (**centre**) has the dress of a soldier; the sword and shield would suggest a 'sword-and-bucklerman' or 'targetier'. He wears a doublet of brick red (already, it seems, a trailmark of the British infantry at this early date — see Ferguson), lined at the collar with green. Blue-grey breeches are secured at the knee with olive ribbons; the stockings are white, the shoes grey (inner) and black (outer); the hat green felt, with a blue and purple band.

The 'Wild Scotsman' is a

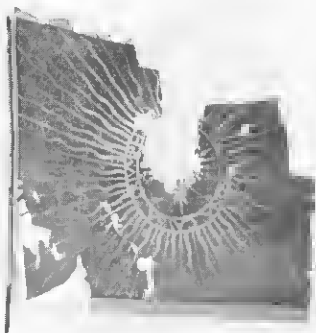
redhead. His costume is reproduced, with minor additions, in Richard Hook's colour plate. His similarity to the description made by Bishop Ross in 1578 is clear: 'mantles' which served as blankets by night; short woollen jackets of the simplest kind; large linen shirts with numerous folds and wide sleeves sewn up with red and green silk thread, some coloured with saffron. In 1581 George Buchanan observed the variegated and striped garments and the favourite colours: purple and blue, 'imitating nearly the leaves of the heather, that when lying upon the heath . . . they may not be discovered.' As for the shorts, Dunbar (see source list) mentions an interesting engraving of the battle of Gembloux (January 1578) showing Scottish troops fighting naked except for 'fairly heavy linclouths, some of which may be described as shorts.' (Ghent University Library)

Right:

Early 17th-century Highland Scot, after a contemporary watercolour in a travel book by Hieronymus Tielssch. This bearded stalwart

wears a blue bannet, a feature which appeared at the beginning of the 17th century. His plaid is green and blue, framed in red, in a pattern that the artist probably had difficulty remembering. Hose and shirt are white with red sett cut diagonally. The shoes are black, the bowcase covered in tan-coloured fur. Though dated somewhat later, he has features similar to De Heere's Scot — particularly the method of carrying the two-handed sword, and the tight checkered shirt or jerkin.





Colours of Arthur Aston's company, captured at Käsemark in 1627; see Richard Hook's colour reconstruction. This drawing was made from the original by J. Jansson sometime between 1904 and 1915. The flag is huge — 2.73 m (hoist) by 3.43 m (fly) reconstructed dimensions. It has a gold sunburst painted on a blue field with a white border. In the centre is the silver eagle with gold claws, the heraldic symbol of Poland, probably displaying on its chest the simple Vasa 'wheat-sheaf' badge (reconstructed on our colour plate from another surviving flag of the Polish Guard). Traces still remain of the chain of the Golden Fleece, an Order awarded to the Vasa in Poland by the Hapsburgs. The motto reads 'TANDEM VENCA CAUSA TRIUMPHAT' which translates as 'The Good Cause Will Always Triumph'. (Swedish Trophy Collection, ST 28:51)

REFERENCES TO BRITISH TROOPS IN POLISH SERVICE

Date	Name (and unit strength, if known)	Remarks
1571	Capt. Callane	Died in Polish service.
1577-78	Col. William Stewart's Scottish companies: Capt. John Trotter (104) Capt. John Thomson (140) Capt. John Barone (96) Capt. William Moncreiff (88) Capt. Alex Ross and John Dallachy (75) Capt. William Beaton (138) Capt. Robert Camulas	In service of city of Danzig.
1581	Capt. Andrew Cameron (118) Capt. John Thomson 684 Capt. William Mollison (31)	Killed Sept. 1577 All 'Scots', took part in Pskov campaign
1587	Thomas Buck Andrew Kent	
1588	Scottish 'Black Betti' (100)	Possibly Chancellor Jan Zamowski's bodyguard.
1590	Andrew Cameron 1600 Scots musketeers*	
1601	Capt. Abraham Young (300 Scots) Capt. Alexander Rulhven (300 Scots)	
1602-05	John Hill	English commander of British troops in Riga
1610	Capt. John Hill Capt. Alexander Sanderson Capt. 'Ashild' Capt. David Gilbert Capt. George Bingles (80)	At battle of Klushino Came over from Muscovite service after Klushino 'Obit Kenneth Roberts', got a wound killed in morning of Sandomir
1613	George Learmonth	
1617	Capt. Andrew Jones	
1617-18	Peter Learmonth, Fuller (200)	
1620	Col. Peter Learmonth (500 'Scottish ragabonds and impromptu men')* Capt. Gilbert Ker Archibald Carmichael John Butler John Fenway	Took part in Chocim campaign English, arrived in August with 120 foot
1621-24	Col. Arthur Aston (500) (c. 200 English/Irish) Capt. Arthur Aston (500) (300 English in 1623) Butler (300 Scots)	See main text
1626-27	William Gilbert (600) Andrew Keith & Patrick Gordon (diagonals) James Butler (Irish) William Butler (son & son-in-law) Maj. Arthur Aston (500)	In Prussia, fighting die Swedes
1633	James Wallison (regt. of 800 men incl. Murray & John Kirkpatrick) James Butler (regt. of 800 foot, 200 diagonals)	
1634	James Butler & George Bennett (800 foot & horse)	Present at Kamieniec Podolski review
1640	Thomas Stirling (now raised from Scots in Sweden settled in Poland)	Wiped out by Cossacks and Tatars near Zbuzim

Notes:
Units marked * are taken from commissions for raising troops, and may have failed to reach the authorised numbers quoted

This is by no means a complete list of British officers and companies in Polish service. It is often hard to determine the nationality of troops under a British captain, due to confusing conventions adopted in Polish documents. 'Scot' was often used as a general term for any British — a serving thought for Scots might be being called 'English'. Again, Western-style infantry in Polish service was often termed 'German', even though lacking a single German national in the ranks.

spell: Bernard Connor, who in 1698 published his *History of Poland*.²⁴

The British generally remembered their service in Poland with some fondness. Henry Gordon, after returning to a lukewarm welcome in Scotland, remarked that he was 'better treated among foreigners than among friends and relatives'. And Patrick Gordon, in his forced exile in Russia, talked warmly of Poland:

'Having served in a country, and amongst such people where strangers had great respect and were in great reputation, and even more trust as the natives themselves,' he saw Poland as a country where any man might by his own work make his mark or fortune — 'where no scruple was shown or difference was shown betwixt natives and strangers'; whereas, in Russian service, he suffered the contempt usually afforded to foreign mercenaries — 'I perceived strangers to be looked upon as a company of hirelings, and at best but a necessary evil.'

Finally, it is interesting to note that the memory of the British in 17th-century Poland is still alive; there are many families who can claim ancestry from old traders and soldiers, and some still have garbled forms of British surnames. One area of modern Gdansk, not far from the Lenin Shipyards of more recent fame, is still called *Stare Szkoty* — Old Scotland.

The links between Poland and Britain do not end there. Jacobite rebels established firm ties in the 1650s during the exile of many of them in Poland, the Stuart and Sobieski lines being tied by the marriage of Sobieski's granddaughter Clementina with James Edward Stuart, the 'Old Pretender'. Their son was Charles Edward, 'Bonny Prince Charlie'. Per-

haps more curious still were their Victorian descendants, John Sobieski-Stolberg-Stewart and his brother Charles Edward. They authored an almost entirely bogus book on Scottish highland clans,²⁵ inventing, it is now thought, many of the modern tartan setts, which were subsequently adopted as entirely genuine. The moral of the story? Beware of Poles writing about Scottish dress!

MI

Source notes:

For reasons of space the sources cited by superior numerals in this article are held over, and will be given in Part 2 as part of a consolidated source list.

To be continued:

Part 2 will cover British mercenaries in Swedish service.

Richard Hook's reconstructions illustrate: (A) Ensign, and (B) Arquebnsier, of Col. William Stewart's Regt. as they might have appeared at Danzig, 1577. The ensign is based upon the manuscript water-colour reproduced elsewhere in this article, showing the ensigns of the regiment in Flanders in August 1578. This is the colour of 'Capt. Bleyre's' company; there is no record of him at Danzig, but while the flag itself may not be applicable, the general casmine is.

This is the fashionable but practical civilian dress of the day, as might be worn by a Lowlander (Fynes Moryson later noted that Lowlanders favoured the French rather than the English mode, but there was little real difference). The decoratively 'slashed and pickled' doublet is worn with voluminous, tasselled 'Venetian' breeches; a small figure-of-eight ruff, and cuff ruffles; a steel gorget; and large hats, with a slashed veil showing at the top of the hat base. The padded front of the doublet, recalling the shape of a breastplate, was high fashion in the 1570s/1580s. When, in 1581, the Scots marched into the Polish camp at Pskov in Muscovy, shortly before the onset of winter, their 'silk stockings and slashed doublets' raised several eyebrows. The Polish king's secretary remarked, with delicious understatement: 'I can see they're going to find it a little chilly . . .'

The arquebnsier (B) is based mainly upon De Heere's contemporary watercolour of a Highlander. Recruited in the Highlands, they are likely to have worn traditional dress. The headdress is based on a surviving example in Scotland, in Spanish calacete style, popular at this period. The matchlock petronel is depicted in several contemporary engravings.

(C) Ensign with colours of King Sigismund's British Footguard, commanded by Maj. Arthur Aston, 1627. Aston's three companies fought the Swedes in Livonia and Prussia for almost six years. On 14 July 1627, at Käsemark, several Footguard companies including some under Aston were in earthworks overrun by Gustavus Adolphus's army. Aston, the colours, and some 300 men were captured.

Comprising entirely musketeers, the unit was described by a contemporary source²⁶ as wearing slouch hats of typical Western type, and rescoulding Swedish infantry. Our ensign is reconstructed from contemporary pictures of Swedes and British mercenary officers. Several sources give the guard of the Polish Vasa kings blue casmine by the 1640s; indeed, the colour was quite general for Polish infantry. It is quite possible that they would have worn blue a decade earlier, though officers would anyway have enjoyed a fairly free choice. He wears blue and yellow sashes — the Vasa colours — which are an educated guess.



Officers' Uniforms

Royal Regiment of Artillery, 1900-1914

PHILIP J. HAYTHORNTHTWAITE

The closing decades of the 19th century saw the beginning of the disappearance of the brightly-coloured uniforms which had remained in vogue for the previous two centuries. The practical but drab service uniform eventually resulted in the elimination of the colourful dress uniform for all but a small number of corps which retained 'full dress' for ceremonial occasions; but in the British Army the period between the turn of the century and the outbreak of the First World War saw a last flowering of the full dress of old. Although the uniforms illustrated in this article represent the equipment of a single officer — Lt. (later Capt.) G. Blackburn, Royal Field Artillery — they are typical of the varied orders of dress used by every officer of the British Army, characterised by the highest standards of workmanship and quality.

Two distinct styles of dress uniform were worn within the Royal Regiment of Artillery: the hussar-style costume of the Royal Horse Artillery, and the much more common uniform of the successors of the old Royal Foot Artillery,

now divided into Field and Garrison Artillery. It is the latter which we describe and illustrate here.

Dress Regulations specify three basic orders of dress for officers: Full Dress, Undress, and Mess Dress, though there existed variations within the



Right:
Helmet plate as used by Territorial batteries — note laurel spray replacing 'UBIQUE' above field gun device. (All photographs in this article are from the author's collection.)

Top of page:
Helmet plate of the pattern used by Regular artillery, including 'UBIQUE' motto. This is the pattern used prior to 1901, showing the 'Victorian' crown which preceded the adoption of the 'Tudor' crown on the accession of King Edward VII: cf. the Territorial plate in the smaller photograph.



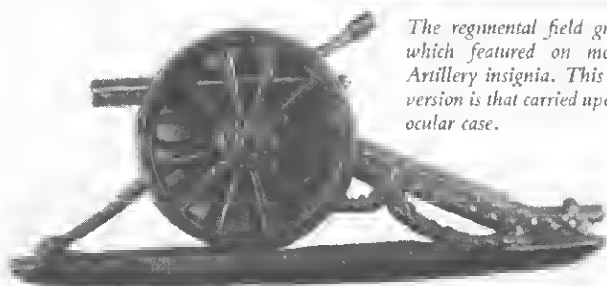
first two categories to cover all duties. In addition, elements of one order of dress could be combined with elements of another on certain occasions, the most incongruous probably being the wearing of the full dress helmet with the khaki service uniform (after the introduction of the latter for home service dress), the helmet serving as protective headgear during duties 'in aid of the civil power'.

THE FULL DRESS HELMET

In common with the infantry and departmental corps, the Royal Artillery adopted the Home Service Helmet in 1878, replacing their earlier fur busby. Imitating the German Pickelhaube, the helmet for officers was made of cork covered with dark blue cloth, the front peak bound with $\frac{3}{16}$ in. wide gilt metal and the rear peak with $\frac{1}{2}$ in. patent leather. It bore a gilt mounting on top, into which was screwed a gilt ball within a leaf cup $1\frac{1}{2}$ in. high, introduced in 1881 to replace the

original spike, which had been found to annoy horses when mounted RA personnel tightened their girths. . . . At each side of the helmet was a rose boss, from which was suspended a gilt curb-chain chinstrap with links $\frac{5}{16}$ in. wide, backed with black velvet and lined with patent leather. This strap was worn under the chin on duty or parade, but on other occasions was looped across to a hook at the rear of the upper mount.

The gilt front-plate incorporated Royal Arms and the regimental field gun device, with the mottoes *Ubique* and *Quo Fas et Gloria Ducunt* upon scrolls; for Territorial batteries the former inscription was replaced by a laurel spray; Militia and Volunteer Artillery units, the latter having silver instead of gilt metal, replaced both mottoes with the regimental title. The design of the helmet plate remained unchanged from its introduction, save for the substitution of a 'Tudor' crown for the earlier pattern upon the accession of King Edward VII in 1901.



The regimental field gun device, which featured on most Royal Artillery insignia. This large, gilt version is that carried upon the binocular case.

THE FULL DRESS TUNIC

The full dress tunic was first authorised in 1855 and adopted in the following year, retaining the corps' traditional colouring of dark blue with scarlet facings and gold lace. The garment was amended in the years following its introduction, until the adoption of a completely new pattern in 1891 which was chiefly remarkable for the addition of dummy pocket flaps on the rear skirts. The tunic was described thus in the 1900 *Dress Regulations*:

'Blue cloth, with scarlet cloth collar. The collar and sleeves laced and braided according to rank, and a grenade at each end of collar. . . . The skirt square in front, open behind, with a blue cloth flap on back of each skirt. Flaps edged round with gold cord, traced inside with gold Russia braid. Skirt lined with black. Scarlet cloth edging down the front, and at the opening behind, nine buttons down the front, two at the waist and three on each flap behind. . . . Plaited gold wire shoulder-cord, lined with blue; a small button of regimental pattern at the top.'

The gilt buttons bore an embossed field gun surmounted by a crown, the design of which changed to one of 'Tudor' style from 1901. The 2-in. scarlet collar had borne a 2½ in. long silver grenade since 1881, when the previous system of rank marking by means of collar insignia was replaced by badges worn upon the gold shoulder cords, which had been introduced in 1880. A further system of rank marking, introduced in 1855, was in the design of the lace on the cuff of the dress tunic; as described by the 1900 *Dress Regulations*:

'Field Officers have ⅝th-inch lace all round the collar within the cord, and a chevron of 1½-inch lace on each cuff, with figured braiding above and below the lace, extending to 11 inches from the bottom of the cuff. Captains and Lieutenants have lace ⅞th inch wide round the

top only of the collar; and an Austrian knot of gold cored on the sleeve, 7½ inches deep from the bottom of the cuff, traced round with gold braid 8¼ inches deep and figured for Captains; 7½ inches deep and plain for Lieutenants. . . .'

In 1902 the rank lace on the cuff was abolished, all ranks adopting the simple Austrian knot worn hitherto by lieutenants. The rank badges authorised for wear upon the shoulder cords in 1880 were as follows: *colonel*, crown and two stars; *lieutenant-colonel*, crown and star; *major*, crown; *captain*, two stars; *lieutenant*, one star; *second lieutenant*, no badge. In 1902 this system was modified to the sequence still used, with captains, lieutenants and second lieutenants wearing three, two and one star respectively. The rank of 'Second lieutenant on Probation' was introduced in 1911, these officers wearing no rank badges on the shoulder cord.

Trousers

From 1855 to 1896 the trousers worn with the full dress tunic were dark blue with a 1¼-in. gold lace stripe. From 1896 these were restricted to use on state occasions, at levées and in the Mess; at all other times trousers were dark blue with a 1¼-in. scarlet stripe. The gold-striped trousers were entirely discontinued from 1902.

Many regiments and corps possessed their own, often unique patterns woven into their metallic lace; for the Royal Artillery the weave consisted of a triple-width zig-zag with a double rib on each outer edge.

Belts

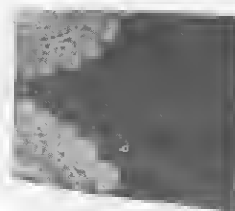
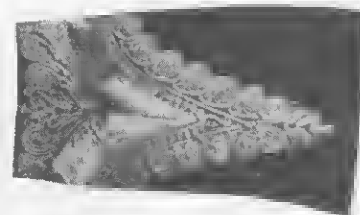
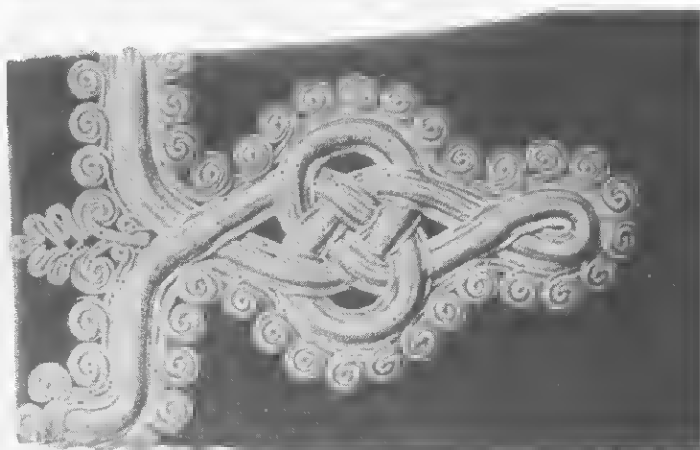
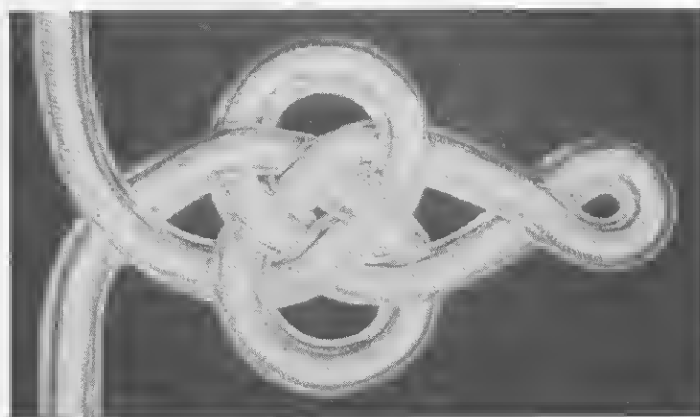
The belt worn with full dress uniform remained the pattern established in 1855: blue Morocco leather covered with the regimental gold lace 1 in. wide (1½ in. 1872), fastened at the front by two gilt plates bearing the Royal crest and joined by a gilt snake inscribed *Ubique*. On earlier examples the Royal crest includes the Victoria crown; later examples have the 'Tudor' crown, and the lions

on the crest face inwards instead of both facing left. (Varieties exist, however: e.g. the belt clasp of Blackburn's uniform has a decorated snake instead of one bearing *Ubique*.)

The belt was officially styled 'Girdle, Mounted Officers, Full Dress'. For the suspension of the sword it was equipped with two 1-in. wide gold lace slings with gilt, lion-mask buckles; prior to 1901 mounted officers' belts also had three shorter slings for the sabretasche, at which date this ornament was abolished.

For occasions other than full dress a 1½-in. wide buff-leather sword belt was used, until the economics of 1902 made the gold-laced dress belt regulation for all occasions. In order to make it fit all requirements, a webbing sword belt was introduced for wear underneath the tunic, with the gold-laced slings attached and protruding from beneath the tunic skirts, the webbing belt being entirely concealed. The gold-laced waist belt, minus slings, could be worn as a girdle over

continued on p. 28



Top:

Austrian knot design on the sleeve of the full dress tunic; this was worn by all officers after 1902, having previously been the distinctive of lieutenant's rank.

Above:

Cuff lace distinctive of captain's rank on the full dress tunic prior to 1902.

Left:

Rank lace worn upon the cuff by field officers prior to 1902; this is the official pattern photograph which illustrated the 1900 *Dress Regulations*.



(1) A print after G. D. Giles, 1889, shows a lieutenant of the Royal Artillery wearing substantially the same uniform as featured in this article. He wears the buff-leather pouch- and waistbelts, the latter with its gilt rectangular plate.



(2) Full dress tunic, trousers, helmet and sword owned by Lt. G. Blackburn, RFA.

(4) The full dress helmet; note that the gilt metal edging is applied only to the front peak.



(3) Collar of the full dress tunic, showing the embroidered grenade badge, and the zig-zag weave of the regimental pattern gold lace.

(7) 1913 pattern mess jacket, with the 1920 mess vest. The shoulder strap now bears captain's ranking; and — another late addition to this uniform — a title indicating Territorial Reserve.

3





5



6

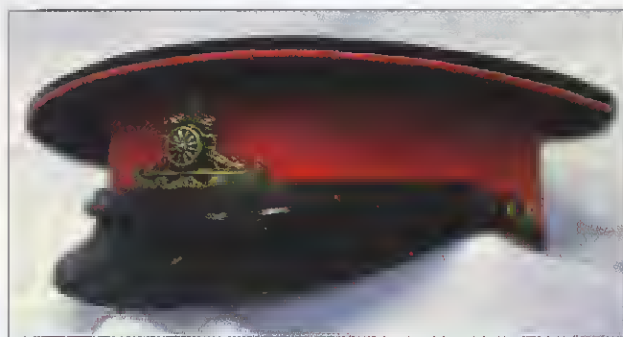


7

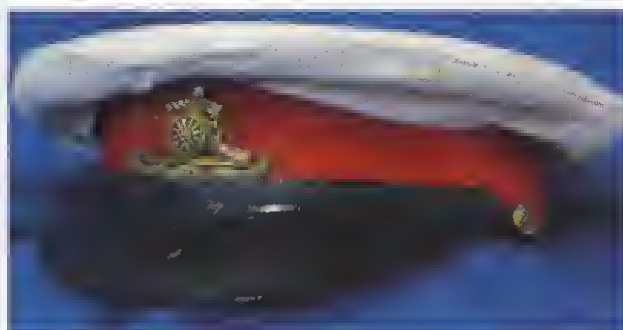
(5) Rear of the full dress tunic, showing the scarlet piping on the rear seam, and the ornamentation of the dummy pocket flaps. Just visible at left is the single star of a second lieutenant on the shoulder cord — a 1902 modification of the 1880 regulations.

(6) The 1907 'frock serge', with the addition of a white collar (1913), and World War I medal ribbons.

(8 and 9) The 1902 pattern forage cap, bearing the Territorial version of the cap badge, with a laurel spray replacing 'UBIQUE'; and the same cap fitted with the white hot weather cover.



8



9

the tunic. The webbing belt was strengthened with black Morocco leather and could be worn with a brace over the right shoulder. First introduced at an unspecified date between 1894 and 1900, it

could also be worn underneath the frock coat (see below).

The full dress pouch belt (worn until 1902) was covered with 2-in. gold lace upon blue Morocco leather, with a gilt buckle and slide and a grenade insignia within a wreath at the end. The pouch was blue Morocco leather covered with blue cloth bearing the Royal arms in embroidery with a gilt gun badge, and the corps motto on scarlet velvet scrolls, the flap edged with $\frac{3}{4}$ -in. lace. For undress the pouch belt was made of 2-in.-wide white buff leather, and supported a black patent leather binocular case bearing a gilt fieldgun badge $3\frac{1}{4}$ in. long, this badge having previously been used upon an undress pouch which had been worn from 1855 to 1890. In 1902 the laced pouch belt and embroidered pouch were replaced by the previous white leather undress belt and a new black patent leather pouch bearing a crowned fieldgun and mottoes in gilt metal, instead of the previous binocular case.



Royal Artillery mess jacket of the pattern worn prior to 1902; inset is the cuff lace of a captain. This is an official pattern photograph from the 1900 Dress Regulations.



Below: Clasp of the gold lace waist belt; note the regimental weave of the lace, and the decorated snake, which in this case does not bear the 'UNIQUE' motto.

Above: An earlier version of the waist belt clasp, the oval plaques bearing Victorian crowns, and the snake inscribed with the motto.



THE FROCK

Other orders of dress required the use of different garments. For use overseas upon non-'dress' occasions, officers had worn a serge 'Patrol Jacket', of blue cloth throughout, with four patch pockets, three ball buttons, and $2\frac{1}{4}$ -in. gold embroidered grenades — the only decoration — on the collar. But this garment was discontinued at the turn of the century, officers being instructed in 1899 to adopt, before January 1901, a 'Frock' to replace the patrol jacket. The new frock was described thus by the 1900 *Dress Regulations*:

'Blue angola, tartan, or serge, full in chest, cut with side bodies, slits at sides, five ball regimental buttons down the front. Two breast patch pockets outside, $6\frac{1}{4}$ inches wide, $8\frac{1}{2}$ inches deep from the top of the flap, the top edge of pocket in line with the second button, with three-pointed flap, small regimental button and hole, loose plait on rear side of pocket, two outside patch pockets below, with three-pointed flap. Two inside breast pockets up and down with hole and button, two inside skirt pockets, with hole and button. Scarlet cloth collar. Shoulder straps of the same colour and material as the rest of the garment . . . fastened with a small regimental button. Italian cloth or thin serge lining. Sleeves with pointed cuffs, 6 inches high in front and $2\frac{1}{4}$ inches behind, with slit and two small buttons and holes.'

In 1907 a new frock was specified, of similar con-

struction to the 1898 pattern described in the 1900 *Dress Regulations*, but with a blue collar, metal rank badges instead of embroidered insignia on the shoulder straps; and, from 1913, a stiff white collar which was to protrude not more than $\frac{1}{8}$ in. above the collar. This pattern of undress jacket remained a permitted alternative even after the introduction of yet another style in 1913, which was basically similar but with an open collar with lapels and four buttons fastening the breast, worn with a white collar and black, corded silk tie. The 1907 'Frock Serge' was henceforward styled 'Frock Serge A', the 1913 pattern 'Frock Serge B'; the choice was entirely at the discretion of the individual. Neither of these patterns should be confused with the reintroduction of the 'Frock Coat' in 1902; this, which had not been worn since 1864, was a dark blue knee-length garment with two rows of six buttons, gold-embroidered rank badges on the shoulder straps, and a gold-embroidered grenade on each side of the collar.

UNDRESS HEADGEAR

The headgear worn with these orders of dress was the forage cap, which until 1902 was of 'pillbox' form, worn slanted over the right eye, only $2\frac{3}{8}$ ins. high, of dark blue cloth with a $1\frac{1}{8}$ -in. regimental gold lace around the side, and the top ornamented with a convex gold button surrounded by gold tracing braid in a pattern of eight large and eight small loops. This was

abolished in 1902 and replaced by a 'naval' pattern cap, which had been used experimentally by regimental staff since 1898.

Of blue cloth, it had three scarlet welts — one around the crown, two around the head band — with a scarlet cloth band between the two lower welts. A $\frac{3}{8}$ -in. black patent leather chinstrap was secured by two small regimental buttons at the sides. At the front was worn the regimental badge in gilt. The black patent leather peak was $1\frac{1}{4}$ in. deep for all except field officers, whose peaks were 2 in. deep and bore $\frac{3}{4}$ -in. gold embroidery. The cap's dimensions were originally $3\frac{1}{4}$ in. deep, $8\frac{1}{4}$ in. wide across the top, and $1\frac{1}{2}$ in. deep between the welts. In 1911 these were altered to $4\frac{1}{4}$ in. deep, $10\frac{3}{8}$ in. across the top and $2\frac{1}{4}$ in. deep between the welts. In hot weather a white cover could be worn over the crown, leaving the scarlet band and cap badge visible.

A folding cloth sidecap — the 'Field Cap' — was introduced in 1883, similar in shape to a glengarry; it was of blue cloth with gold French braid welts and front and rear seams, bore two small buttons at the front, and originally an embroidered gold grenade on the left. From 1894 the badge changed to 'a grenade in gold embroidery, with a scroll under it, bearing the motto *Ubique* in silver embroidery, on a scarlet ground'. For the Royal Field Artillery the body of the cap was changed to scarlet in 1899, but the Royal Garrison Artillery continued to use the blue version until 1902, when the field cap was abolished for all branches. (However, it continued to be used unofficially in India, and was being worn even on home service prior to its official reintroduction in 1937.)

MESS DRESS

From 1855 a tailless 'Stable Jacket' was worn by officers on all occasions when the rank-and-file appeared in stable or drill order, and in the Mess. The later variety, approved in 1876, had gilt

ornamental studs down the front instead of buttons:

'Blue cloth, with scarlet collar and pointed scarlet cuffs, laced all round, including top of collar, with $\frac{3}{4}$ -inch gold lace, regimental pattern, forming a bull's eye at the bottom of each back seam; small gold tracing on collar seam; hooks and eyes down the front, a row of small studs on the left side, scarlet lining . . . A silver embroidered grenade is worn on the collar.'

From 1880 the Mess Jacket bore gold plaited Russia braid shoulder cords bearing rank insignia, which was also present as cuff-lace as on the dress tunic:

'Field Officers have a flat chevron of inch lace, extending to 6 inches from the bottom of the cuff, with braided eyes above and below the lace, the bottom of the braiding to reach just over the top of the scarlet cuff. The top of the braiding extends to $7\frac{1}{2}$ inches from the bottom of the cuff. Captains have on the sleeve an Austrian knot of $\frac{1}{4}$ -inch gold Russia braid, traced with $\frac{1}{8}$ th inch braid. A further tracing of eyes above and below the knot. The Austrian knot extends to $7\frac{1}{2}$ inches from the bottom of the sleeve; the figured braiding to 8 inches. Lieutenants — As for Captains, but without the tracing of eyes.'

From 1896 the jacket was worn only in the Mess (at which date the term Mess Jacket replaced Stable Jacket), being worn open to display a scarlet waistcoat:

'Scarlet cloth, edged all round, including collar, with $\frac{1}{2}$ -inch gold lace, regimental pattern; pockets edged with gold Russia tracing braid, forming a crow's foot and eye at each end, with crow's feet in centre — to fasten with hooks and eyes, small studs down the front.'

This pattern of Mess uniform became obsolete in 1902, although officers were permitted to retain it until January 1906. It was replaced in 1902 by a new Mess Jacket: a dark blue waist-length garment with blue collar and lapels, scarlet pointed cuffs

and blue shoulder straps (sewn down, minus buttons) bearing metal rank insignia. It had no buttons, and its only decoration was a badge upon each lapel, of a gold embroidered grenade above a silver *Ubique* scroll upon a scarlet cloth ground. It was worn with a scarlet cloth Mess Vest (a waistcoat cut low to expose the shirt front), without a collar and with four small gilt buttons.

This pattern was amended by the introduction of buttons on the shoulder straps; and was allowed to be worn out by officers possessing it despite the introduction of a new pattern in 1913. This was dark blue, as before, but with corded scarlet silk facings on the lapels; round blue cuffs $2\frac{3}{4}$ in. deep, with a three-pointed flap bearing three buttons; shoulder straps with metal rank insignia; and four small convex buttons on each side of the breast. This jacket was worn with a white vest with four small buttons, changed to dark blue in 1920. With all patterns of Mess uniform the red-striped dress trousers were worn, with a starched shirt with wing collar, and a black bow tie.

The Sword

From the mid-1840s officers of all branches of the Royal Artillery carried sabres based upon the 1822 light cavalry pattern, simply described in the *Dress Regulations*:

'Half-basket, steel hilt, with two fluted bars on the outside; black fish-skin grip, slightly curved blade, $35\frac{1}{2}$ inches long and $1\frac{1}{4}$ inches wide, grooved and spear-pointed. Scabbard — steel . . . Sword Knot — White buff leather, $\frac{1}{2}$ inch wide, with runner and gold acorn.'

Even at this period of strictly controlled dress regulations, it is a mark of the latitude allowed to individual officers that Lt. Blackburn carried not the regulation light cavalry pattern with the steel, triple-bar guard as described above; but an 1822 infantry pattern with gilded hilt of a more complex design, including a crowned



Lion-mask buckle carried upon the sword slings; note the regimental weave of the gold lace.

Royal cypher within an oval as part of the guard. As Blackburn's sword bears the cypher of Queen Victoria it is likely that this weapon was either a family heirloom, or was acquired second-hand — a practice not unknown. As if to compound the error, Blackburn used not the regulation white leather sword knot, but the pattern used by the Royal Horse Artillery: of gold cord, with gold acorn and runner. [M]

References:

Successive Dress Regulations; The Dress of the Royal Artillery, D. A. Campbell (London, 1971); *Swords of the British Army*, B. Robson (London, 1975)



ROMAN ARTILLERY (2)

PAUL HOLDER
Painting by ANGUS McBRIDE

Part 1 of this article, which appeared in 'MP' No. 2, described and illustrated Roman arrow-shooting artillery. In this concluding part Dr. Holder describes the more difficult subject of stone-throwing artillery, of which almost no physical remains have been found by archaeologists. Nevertheless some literary evidence, and the results of attempted reconstructions, do provide us with an idea of the appearance and capabilities of these machines, some of them of impressive size and power.

In addition to arrow-shooters, the Romans also adopted stone-throwing torsion artillery from the Greeks. These more powerful *paliutone* ('fold-back spring') machines were called ballistas by the Romans. They differed from the *euthytone* ('straight spring') arrow-shooters mainly in that the torsion springs were housed separately (i.e. not mounted directly into the structure of the frame), and were then fixed in place in the frame in such a way as to allow the arms to move through a larger angle, giving the power necessary to hurl stone balls of various sizes. However, with one problematic exception, no remains of a ballista have survived antiquity. We rely largely upon written descriptions which pose the same problems of interpretation as with the arrow-shooters.

Vitruvius, an artillery adviser to both Julius and Augustus Caesar in the later years of the 1st century BC, supplies a technical description of a ballista. While his machine is based upon Hellenistic forerunners, his personal experience in making ballistas allows us to believe that his measurements should be correct for Imperial artillery.

As with arrow-shooting machines, it is the diameter of the sinew spring which provides the module for all the measurements of the engine. A complicated math-

ematical formula was needed to determine the correct spring diameter for stone projectiles of a given weight: $D(\text{iameter of spring}) = 1.1 \sqrt[3]{100 M(\text{ass of projectile})}$. This involved finding a cube root before the invention of logarithm tables, and was most simply done geometrically by using the 'theorem of two mean proportionals'. Alternatively, an artilleryman could ask a mathematician to provide him with a set of tables giving the spring diameters for the weights of stone he might

use: most readers will no doubt prefer to follow the example of our ancient 'gunner', and turn to Table 1 . . . This is quoted by Vitruvius, who vouches for the figures from personal experience.

Vitruvius' figures are not, however, comparable with those provided by the Hellenistic technical writer Philon (c. 250/200 BC): Vitruvius' spring diameters are smaller. Either the Romans produced more powerful machines by inserting more sinew into the springs of their ballistas; or their machines were 'under-sprung', and less powerful than Hellenistic examples. The bronze washer for a Vitruvian spring was oval rather than round, which meant that more rope could be inserted. The late E. W. Marsden felt that this would have made little difference to the weapon's power, however; like other modern scholars, he believed that there was something wrong with the figures. He thus proposed to substitute *unciae* (Roman inches) for digits (units measuring 1/16th of a Roman foot), which would bring the figures into line with those of Philon. The bal-

Angus McBride's colour plate is an attempt to reconstruct an incident recorded by Ammianus during the siege of Amida in AD 359. The besieging Persians had constructed iron-clad siege towers mounting arrow-shooting artillery. The Roman defenders moved four onagers to oppose them under cover of darkness; and in the ensuing fighting stones from the onagers successfully destroyed the towers.

What Ammianus does not say is how big the onagers were, and how they were moved. From his mention of battlements it seems that they were positioned on the walls. Given the width of Amida's walls this is possible, if they were machines of about the same size as the largest one reconstructed by Paye-Gallwey, which was 2.44 m long. The onager shown here is therefore based largely on Paye-Gallwey's, but with modifications to the buffer and spring suggested by Marsden.

An onager of this size, weighing about two metric tons and throwing a stone of about 3.62 kg, apparently did not need the special platform of shock-absorbent turf or brick to counteract the recoil, which Ammianus records for the larger machines. It would thus be possible to manhandle them along a wall-walk about 3 m wide — though it could not have been a pleasant or easy task, especially at night. In action each weapon would require a crew of two or three to wind the arm down and load the sling. The trigger would be released by a blow, probably from a long-handled hammer.

Like the onager, the costumes shown are inevitably speculative. There is some evidence for the general style of 4th-century Roman military uniform; and some students believe that legionary infantry would have retained basically red tunics and red crests. The use of crests in battle is speculative; there is good archaeological evidence for the long spatha-style sword and degenerated form of the legionary dagger, however. Most finds (including the Woras, Augst and Intercisa helmets, upon which we base those illustrated) come from the West, so the degree to which Germanic-style metal-fitted belts were used in the Eastern armies is unknown. There is some evidence for the use of the type of cap illustrated, with and without a turban. Some students believe that auxilia wore basically white tunics.

The Notitia Dignitatum illustrates no shield patterns for the Quinta Parthica or the other units wiped out in the fall of Amida. However, there is a suggestion from internal evidence that pairs of units raised together bore very similar patterns, perhaps simply with reversed colours. While cheerfully admitting that it is mere guesswork, therefore, we have given our legionary officer a shield with a reversed-colour version of that recorded for the Sexta Parthica.

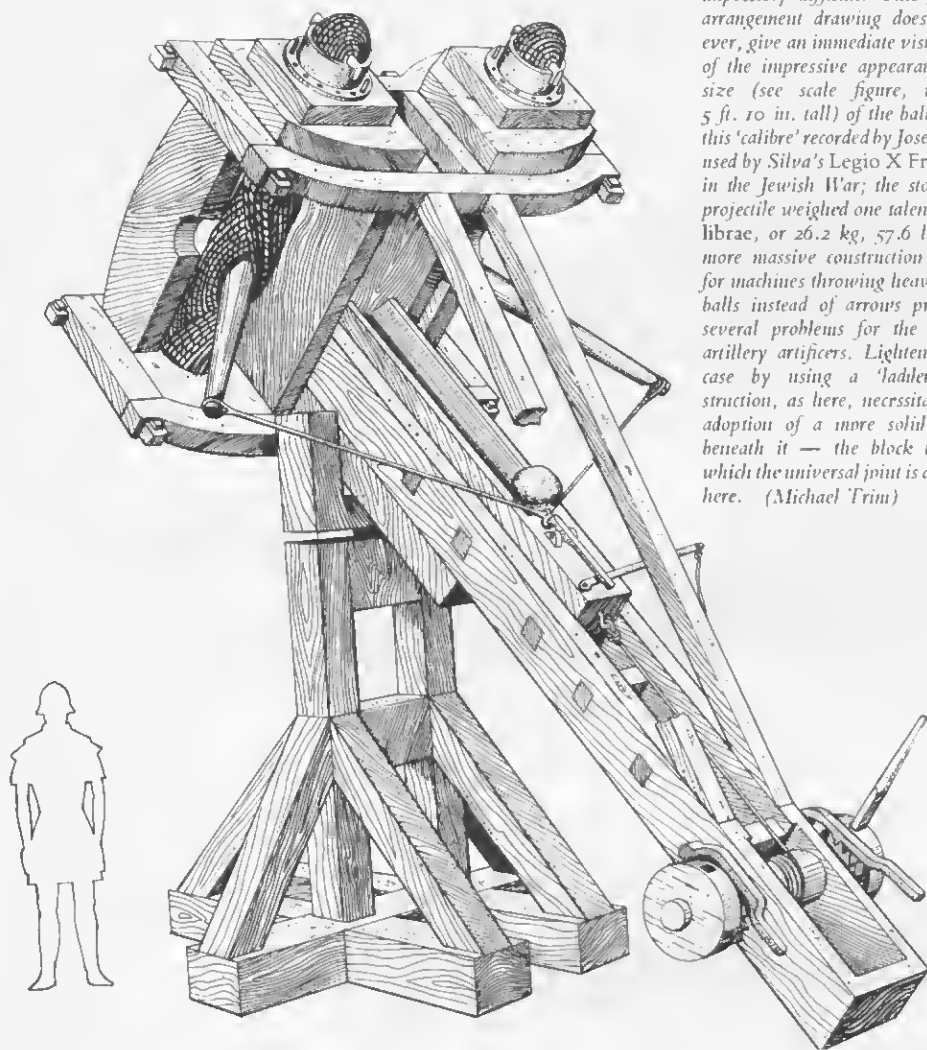
Table 1			
Spring dimensions, after Vitruvius:			
Stone weight (librae)	Stone weight (kg)	Spring diameter (digits)	Spring diameter (cm)
2	0.65	5	9.25
4	1.31	6	11.10
6	1.96	7	12.95
10	3.27	8	14.80
20	6.55	10	18.50
40	13.10	12.75	23.58
60	19.65	13.12	24.28
80	26.20	15	27.75
120	39.30	17.50	32.37
160	52.40	20	37
180	58.95	21	38.85
200	65.50	22	40.70
240	78.60	23	42.55
360	117.90	24	44.40

Table 2		
Weights of ballista balls		
Find spot; and weight in graeculae	Approx. weight in librae	Possible 'calibre', in librae
Masada:		
600	1.8	2
1300	4	4
2630	8	8
5400	16.5	16
Burnswark:		
600	1.8	2
700	2.2	2
1100	3.5	4

Reconstruction of a one-talent ballista, after Marsden and D. Todd. The details of construction must inevitably be speculative, since the lack of physical remains prevents

our knowing with any certainty which parts were made of or reinforced with metal; iron sheathing plates on the outer surfaces of the frame assembly, in the same manner

as used on at least some arrow-shooters, are quite feasible. The universal joint at the point of balance is not mentioned in the sources; but if one was not incorporated the traversing of the engine from target to target would seem to have been impossibly difficult. This general arrangement drawing does, however, give an immediate visual idea of the impressive appearance and size (see scale figure, roughly 5 ft. 10 in. tall) of the ballistas of this 'calibre' recorded by Josephus as used by Silva's Legio X Fretensis in the Jewish War; the stone ball projectile weighed one talent — 80 librae, or 26.2 kg, 57.6 lb. The more massive construction needed for machines throwing heavy stone balls instead of arrows presented several problems for the ancient artillery artificers. Lightening the case by using a 'ladder' construction, as here, necessitated the adoption of a more solid 'table' beneath it — the block through which the universal joint is attached here. (Michael Trim)



lista remains found at Hatra in Iraq apparently vindicate the measurements in digits given in the text, however; and this may mean that the Romans did indeed produce stone-throwers in some way more powerful than their Hellenistic forerunners.

BALLISTA 'CALIBRES'

The range of 'calibres' provided by Vitruvius gives an idea of the ballistas which might have been used by the Imperial legions. In Republican times very large ballistas are recorded. The poet Lucilius, who served with Scipio Aemilianus at the siege of Numantia in Spain in 133 BC,¹ records a ballista which threw stone balls

weighing 100 librae (32.7 kg — roughly 71½ lb.). Sisenna, writing about the Social War of 90–88 BC, mentions four one-talent (80-librae) ballistas. At Carthage some 5,600 stone balls have been found, which may be either Roman or Carthaginian. The largest seemed designed for a 1½-talent stone-thrower (120 librae), the most popular calibre being 15 minae (20 librae, or 6.55 kg). Table 2 gives a number of other weight correlations from recovered projectiles. The largest known Imperial machines are the one-talent (80-librae) ballistas recorded by Josephus in the Jewish War of the AD 70s.

Vegetius, writing in the late 4th century AD and using current terminology, states

that each cohort of the 'antiqua legio' was provided with an 'onager' — the later one-armed version of a stone-throwing machine. In early Imperial times there would thus have been ten ballistas to each legion; but neither their calibres nor their crew numbers are known. According to Vegetius, a *contubernium* or eight-man squad from each century was responsible for the century's single arrow-shooter. Generally, such weapons only needed a crew of two in action; so there would have been men spare from the six artillery *contubernia* in each cohort to operate its ballista. Gen. Schramm, in his experiments with modern reconstructions before the First World War,

estimated that four men were needed to operate a machine throwing stones of between c. 10 and 60 librae; six men, for a Roman '80-pdr.'; and ten to 12 for anything larger.

The literary sources only specify the larger calibre ballistas. Josephus alone gives a general idea of size when he says that the artillery of Silva's Legio X Fretensis was bigger and more powerful than that of the other legions participating in the Jewish War. This might suggest that it had a preponderance of the one-talent (80-librae) machines which he specifies. Ballista balls found at Masada, besieged by Legio X in AD 73, are only 'as big as large oranges', however. Photographs show that the size range was between c. 8 cm and c. 15 cm (see Table 2 for approximate weights).

The only other site which has produced undoubted ballista balls of the Imperial period is the artillery range at Burnswark in Dumfriesshire, Scotland. Again, the ammunition was relatively small, the size range between c. 8 cm and c. 9.5 cm (see Table 2). Because this was a practice range it may have been decided not to use the larger weapons. All of the ammunition was carefully worked into a ball shape, with either one or two flat surfaces to stop it rolling around when stored or stacked in the emplacement.

A number of auxiliary forts in Britain have produced balls of varying weight which have been claimed as artillery ammunition. On the Antonine Wall, 110 balls have been found at Bar Hill, ranging in weight from 80 gm to 3.3 kg. None of these is as regular as those from Burnswark; and it must be remembered that auxiliary units apparently did not use artillery until the 3rd century, which would not square with the believed occupation date of the site. Besides, numerous sites on the German *limes* defence lines have produced similar finds of roughly-

¹See Osprey MAA 180, *Rome's Enemies (4): Spanish Armies 218 BC–19 BC* by Rafael Treviño for a description of this campaign.

shaped balls: 70 were found at Hesselbach, the largest weighing about 20 kg, and 47 examples weighing between 0.5 kg and 1.8 kg. On this site stone-throwing artillery is out of the question, because it would have been too big. These stone balls are far more likely to have been hand-thrown missiles, used for a defensive tactic which figures prominently in the literary sources.

BATTLE RANGES

Josephus says that the one-talent (80-librae) ballistas of *Legio X Fretensis* had a range of two stades (328 m) or more; but Josephus is known to have been prone to exaggeration. A number of modern experiments have been attempted to see if this figure is plausible. Although the same materials were used as for arrow-shooter reconstructions, the results were not as successful, mainly because only small-calibre stone-throwers were reconstructed.

Schramm's ballista threw a ball of 655 gm (2 librae) 184 m; but achieved a range

of more than 300 m with a lead shot weighing 453 gm. Marsden thought that a better performance might have been achieved if the arm movement had been increased from Schramm's 45° to 50°. The only other experimenter has been R. Payne-Gallwey, whose small ballista, using a 10 cm diameter bundle of rope as a spring, threw a 453 gm ball over 300 metres. He expressed himself confident that a Roman machine would have been able to throw a 3.5 kg ball about 450 metres.

As it happens, there are two Roman sites which offer us some inference of the range over which Roman ballistas operated. At the late 2nd century artillery range at Burnswark a large mound was constructed in front of each of the three entrances of the south camp facing an abandoned hillfort. Each mound 'covered' an entrance to the hillfort, between 120 m and 140 m away. The ballistas were apparently set up on these mounds and aimed at the entrances. (The Roman camp on the other side is a similar distance from the fort.)

During the siege of Masada in AD 73 the Romans concentrated their artillery fire either side of the point on the north-western casemate wall at which they were aiming their ramp. There is a prominent knoll near the base of this ramp which seems an ideal artillery position, because it reduces the 80-metre height difference between the opposing positions. The distance from the knoll to the wall is c.180 m, and the distance to the spots where most of the ballista balls have been recovered is c.200 m; a few were found around an internal building c.250 m from the presumed battery position.

Considering the trajectory of shot, however, it seems incredible that most balls fell in just this small section of casemate wall. More plausibly, these 'hundreds' of rounds of ammunition were fired by the ballistas mounted in the 27.75 m-high siege tower when it was hauled into place at the top of the ramp. Since they had no significant recoil, the ballistas could be used most effectively to keep the defenders away from the wall while a

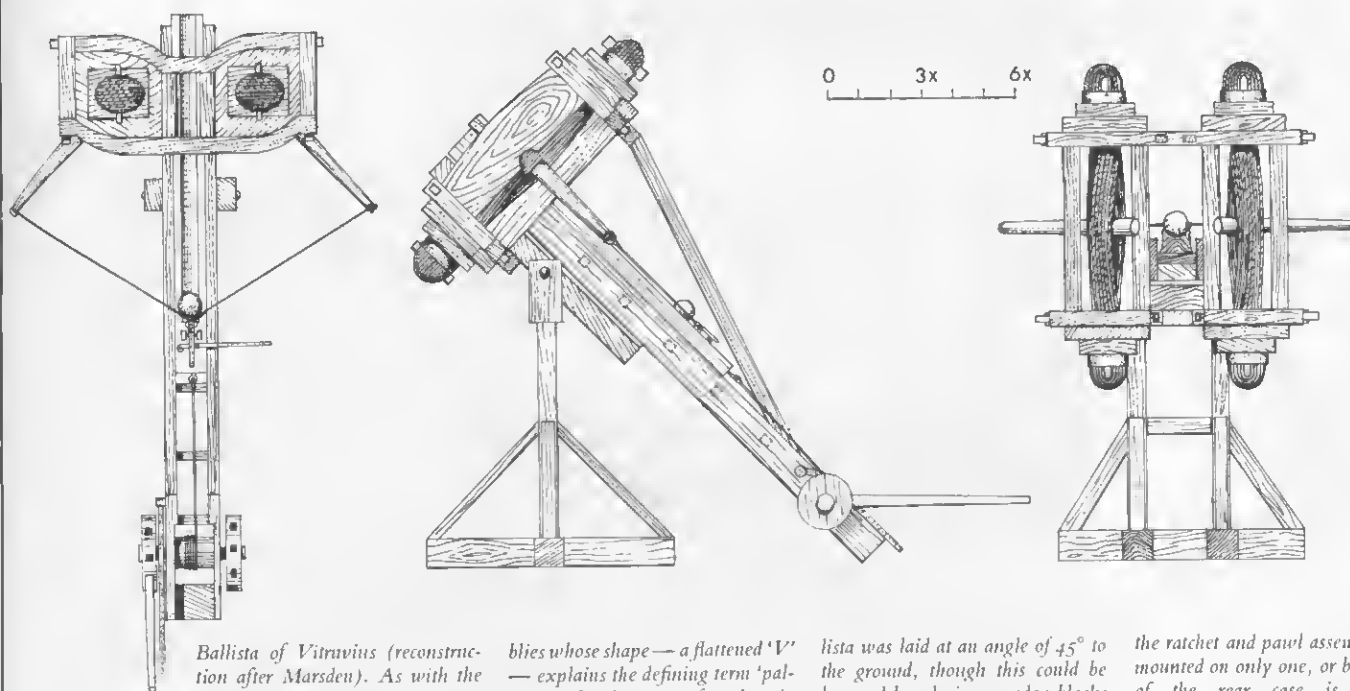
breach was being made with the ram.

EFFECTIVENESS

This anti-personnel use of the stone-thrower is very much what the Roman Imperial army wanted it for; and ballistas mainly operated in conjunction with arrow-shooting artillery, archers and slingers over ranges of between c.50 m and 200 m.

In the field, ballistas could wreak havoc. At the second battle of Cremona in AD 69 the Vitellian *Legio XVI* was operating an enormous machine which was mowing down the enemy front line of ex-Practorian Guardsmen. The Flavian casualties would have been even worse if two soldiers had not picked up Vitellian shields, crawled forward, and disabled the ballista before paying for their heroism with their lives. (This brief reference in Tacitus' *Historiae* is, of course, the main literary evidence for the use of shields painted with unit devices by Roman legionaries.)

On the few occasions when the Romans had to conduct



Ballista of Vitruvius (reconstruction after Marsden). As with the arrow-shooters, the spring diameter provides the module (x) for the other dimensions: the slider is 11½x, the case or 'ladder' 19x, and the arms 6x. Each spring was housed at the end of horizontal frame assem-

blies whose shape — a flattened 'V' — explains the defining term 'palintone' for this type of engine, in contrast to the 'euthytone' arrow-shooters and earlier stone-throwers, whose springs were mounted in straight horizontal members or 'hole-carriers'. Normally the bal-

lista was laid at an angle of 45° to the ground, though this could be lessened by placing wooden blocks under the rear end of the case. Marsden shows the universal joint as a fairly massive wooden block: others have speculated that it could have been a metal forging. Whether

the ratchet and pawl assembly was mounted on only one, or both sides of the rear case is another unanswered question. (The near-side diagonal strut has been omitted here for clarity in the side-view, as in the drawing opposite.)

(Michael Trim)

sieges the stone-throwers, in conjunction with arrow-shooters, were used to bombard the walls and keep the defenders' heads down, as at Masada and Jotapata. During the Jewish War Vespasian and Titus tended to use ballistas alone to break up and repel enemy sallies, because of their devastating effect on close-packed groups of men. The effect of their missiles on individuals was even more spectacular — if Josephus is to be believed . . . He claims that during a night action a man standing next to him on the town wall of Jotapata was decapitated by a ballista ball, and that the head landed 492 m away!

Rarely did the stone-throwers inflict damage on town defences. In that same night action at Jotapata it was apparently worth special mention that some balls knocked away battlements and even broke off the angles of towers.

To guard against the barrage of Roman ballista balls during the siege of Jerusalem in AD 70 the Jews appointed watchers to give warning of

incoming shot; the white stone balls were easy to spot against the background, giving the defenders in the line of fire time to heed a warning shout. When the Roman artillerymen realised what was happening they blacked the balls, restoring their effectiveness.

It was also possible to put ballistas to a different use. When besieged by Caesarian forces in 49 BC the Massiliotes converted their larger ballistas to fire huge arrow-like bolts, 12 Roman feet long; such was their force that these missiles could go through four thicknesses of wicker mantlets before sticking in the ground.

It is recorded that Corbulo devised an even more unusual use for a ballista while besieging Tigranocerta in AD 60. He executed a captured Armenian nobleman, and shot his head into the city from a ballista. The story has it that it happened to land right in the middle of a meeting of the city council, which immediately voted to surrender!

If all else failed, the ballista itself could even be used as a missile. In the aftermath of the second battle of Cremona the Vitellians defending their camp near that city found that their ordinary ammunition was having no effect on a Flavian *testudo* formation: so they tipped a ballista off the rampart on to them! It crushed many Flavian soldiers; unfortunately, it also destroyed the merlons and upper rampart of the camp.

The idea that the onager replaced the ballista as the Roman army's stone-throwing weapon at about the beginning of the 3rd century has been shown to be wrong

— or at least, overstated — by the excavation of the remains of a ballista at Hatra in Iraq, which was destroyed in AD 240/241 when the Persians sacked the city.

The High Rochester fort *ballistarium* (artillery emplacement) which was recorded on two inscriptions of AD 220 and 225–235 is thus unlikely to have had any connection with the onager. The putative platform, needed to absorb the recoil of this type of weapon, which was so identified at the rear of the rampart at High Rochester must have had some other function, as the ballista which we may presume to be still in use at the time had no significant recoil. Likewise the 50 kg globular stones found at High Rochester, at near-by Risingham and at Halton Chesters on Hadrian's Wall, which have been identified as stones for onagers, would not have been used by ballistas. The construction of an artillery emplacement at High Rochester perhaps entailed little more than putting a roof on an existing tower to protect an artillery piece from the elements. The garrison, *cohors I fida Vardullorum milliaria equitata*, did the work, and probably operated the artillery. As High Rochester was a major outpost north of Hadrian's Wall this improvement of the fort's defensive capabilities was important.

THE HATRA BALLISTA

The remains from Hatra are unique in that they represent the only surviving frame of a ballista — though some fittings from another ballista have also been found at Hatra. The machine is very different from the Vitruvian model. The front of the frame is a neat rectangle 8 Roman feet long by 3 Roman feet high, which gives it a wide, squat appearance similar to that of the arrow-shooting ballistas (see Part 1). This makes it difficult to determine the calibre of the machine, and the dimensions of its missing components, because the ratio of the diameter of the spring to its length

is only 1:6.7, as compared to the 1:8.7 of the Vitruvian ballista. In this respect the internal diameter of the bronze washer cannot be used; instead, the spring volume can be compared with Vitruvian volumes for different calibres. The 21.7-litre Hatra volume compares well with the 22.2 litres of a 10-*librae* (3.27 kg) Vitruvian weapon. The module of construction was therefore probably 8 digits, which fits with a number of measurements from the remains.

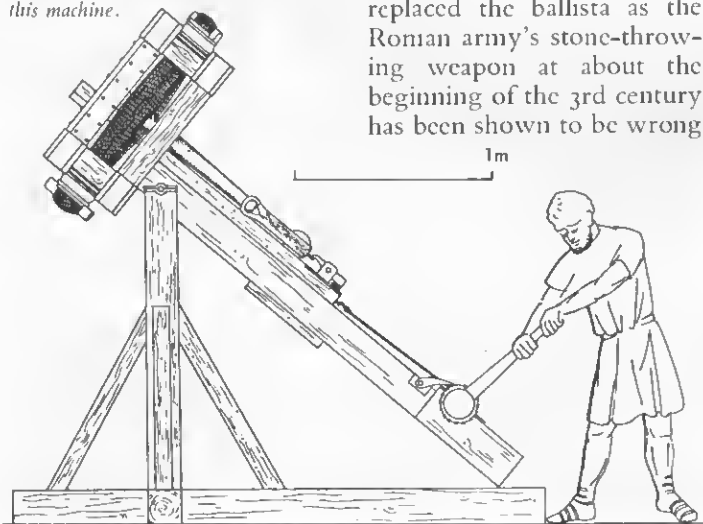
While the Hatra ballista was built using a development of the formulae of Vitruvius, the wide frame, with the centres of the springs 6 Roman feet apart, makes it difficult to reconstruct the positioning of standard-length arms. It has been suggested that the twist of the springs might have been reversed so that the arms, when released, swung forward inside, rather than outside, the frame, moving towards one another in the centre of the frame; but this is not now believed to be a feasible explanation.

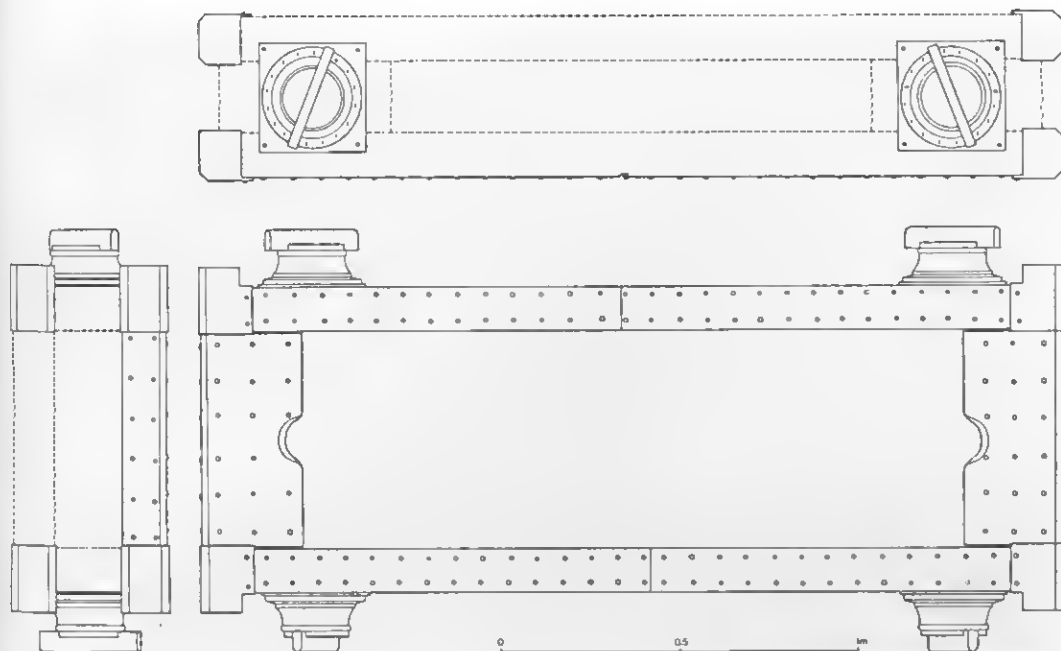
Although the Hatreni were renowned for their artillery, in the 230s a Roman garrison was installed in Hatra. This ballista, whose exact appearance remains a mystery, probably belonged either to the auxiliary cohort attested as the garrison, *cohors IX Maurorum*, or to a legionary detachment.

LATE ROMAN ARTILLERY UNITS

In the reforms of Diocletian (r.284–305) and Constantine (r.307–337) the legions lost their integral artillery. Instead, a legion of *ballistarii* was permanently attached to the field army by Constantine. The unit, nominally 1,000 strong, operated mobile and siege artillery, and was paired with a legion of *propugnatores* (pioneers) who provided the manpower for siege operations. At the same time more emphasis was placed on garrison artillery, spanning all types of weapon, as Rome was now

A tentative reconstruction of the Hatra ballista, by Dietwulf Baatz, based on the finds of the frame, bronze rollers for the slider ropes, and trigger mechanism. The case, slider, windlass and base have been supplied using the dimensions given by Vitruvius for a 10 librae machine. Computer simulations recently carried out by Baatz have suggested that the angle of the ballista to the ground should be much less if shooting is to be really accurate. Enough wood survived to show that the local Caucasian wing-nut tree was used in the construction of this machine.





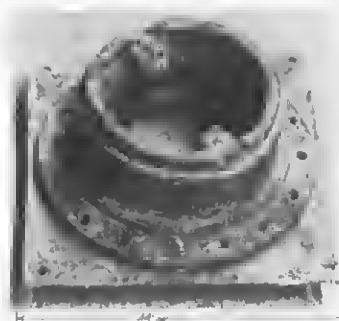
Metal parts of the Hatra frame, from above, side, and front. The springs were an integral part of the frame; no 'hole-carriers' were needed, producing the flat front and neat rectangular shape of the frame. The wood was mortised together, and the corners were covered with bronze fittings. The whole front surface was covered with sheets of bronze c.2 mm thick, fixed with nails. Military logic, and the exact circumstances of the find, strongly suggest that the bronze-covered face was the front; but if this is so, then the position of the two half-round cut-outs — normally incorporated to accommodate the forward movement of the aris — is hard to understand here. In the centre of the long, lower crosspiece of the frame were found two strong iron bolts and two heavy iron bands for attaching the case to the frame. (D. Baatz)

on the defensive and heavily fortified her military posts and cities. These included the large, static arrow-shooting ballistas, such as the *ballista fulminalis* shown below and discussed briefly in Part 1.

Some of the artillery from the old legions was moved into exposed strongpoints. On the Danube artillery detachments from the two legions stationed within a province are known at Daphne in Moesia II and at Castellum Onagrinum in Pannonia II. Both these sites, and possibly three others, form bridgeheads opposite legionary fortresses to ease

the movement of forces across into enemy territory. One other regiment of artillery had a special function. This was raised during the reign of Constantine I at Cherson in the Crimea from the local inhabitants, who specialised in the use of the *manuballista* (see Part 1), and who formed the garrison there right up to the later part of the reign of the Byzantine emperor Constantine VII (c.AD 948–952).

The *Notitia Dignitatum*¹ records six legions of *ballistarii* attached to field armies, and one unit stationed on the Rhine frontier at Boppard



near Mainz. In origin these were in fact only three regiments. The field army bal-

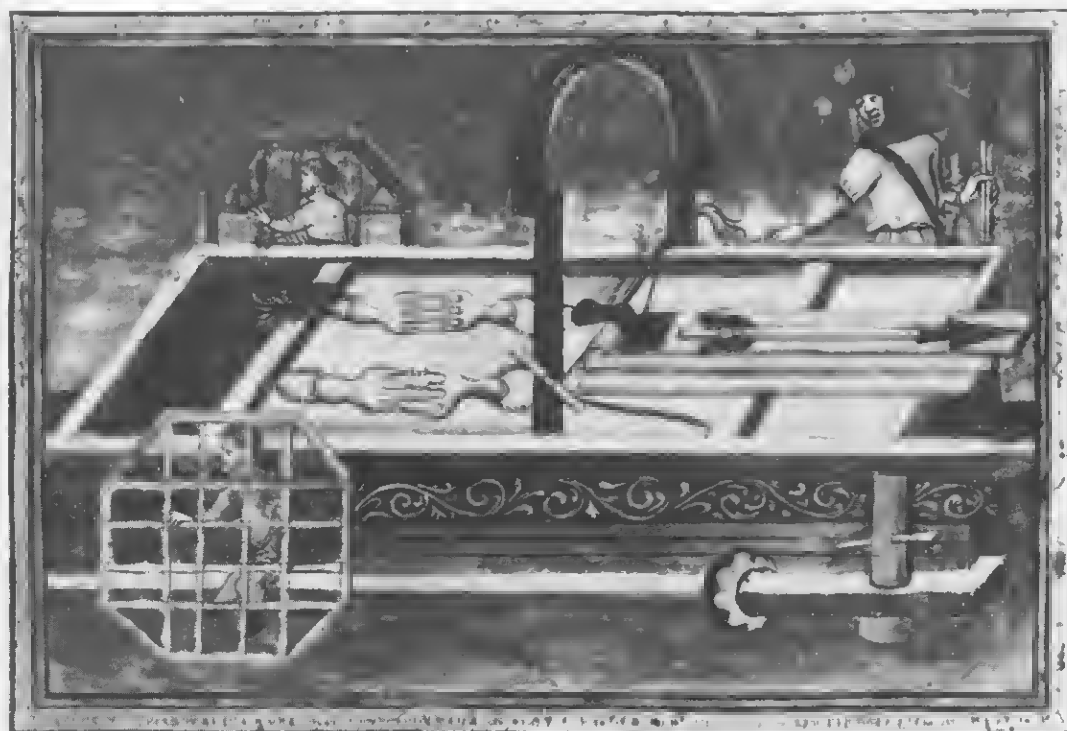
¹The problematical 'list of high offices' of c.395, surviving in several questionable copies, which to some extent provides a kind of 'order of battle' of the Western and Eastern Roman armies of the day, though raising as many problems as it solves.

Left:

Bronze washer and counterplate from Hatra. The cast bronze washer had an inner diameter of 17.5 cm at the bottom and 16 cm at the top. The 16 regularly spaced holes in the flange were used in conjunction with four pairs of holes in the counterplate to re-tension the spring, a retaining pin being passed through both sets of holes. Reinforcing ribs were cast below the notches in the rim for the iron tightening levels, to help ease the considerable strain exerted on them by the spring. (D. Baatz)

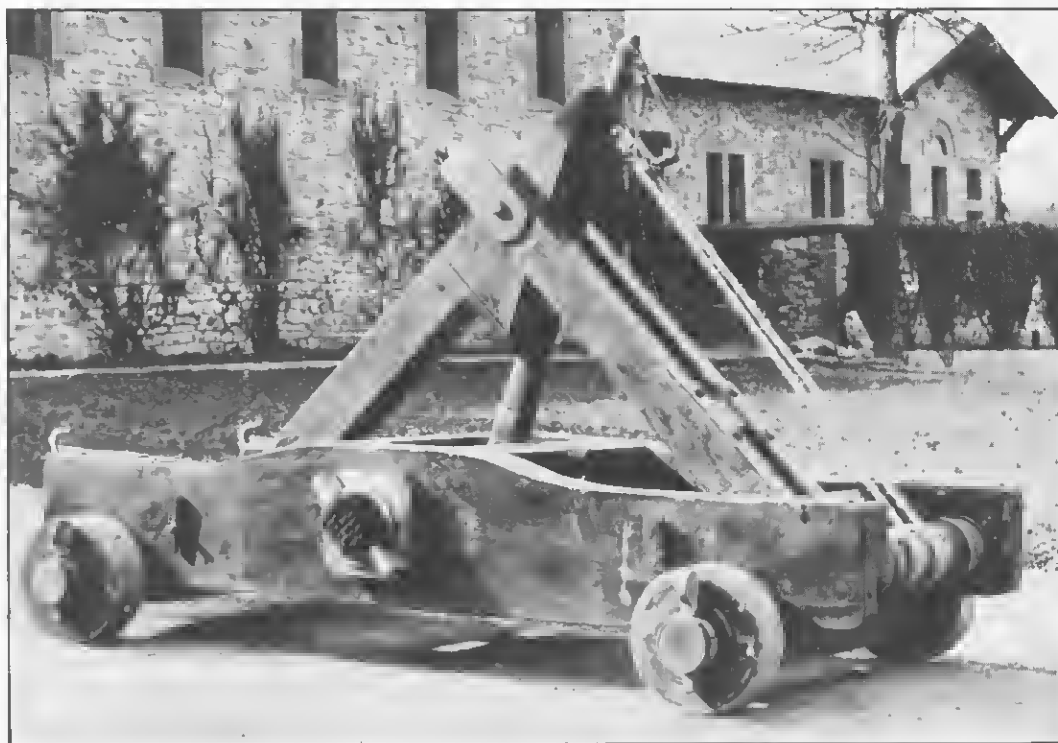
Below left:

While not showing a stone-thrower, this manuscript illustration of the *ballista fulminalis*, from the anonymous MS 'De rebus bellicis' of c.AD 368, is interesting as an example of the large defensive artillery pieces which seem to have preoccupied Roman engineers of this period. It is also a good example of the difficulties of interpretation, as the illustration leaves a lot to be explained. Although the two windlasses (octagonal frames at left) needed to pull back the slider imply a very powerful machine, it is unclear how the arrow was propelled. Of the two pairs of pulley blocks at the rear, one would have pulled back the slider; the other must presumably have pulled the slider forward again if the windlass was turned the other way. The first pulley is mistakenly shown connected to the trigger. The side screws elevated the weapon; and there must presumably have been a universal joint under the centre of gravity for traversing. As discussed in Part 1 of this article ('MI' No.2), it has been suggested that the actual 'bowstring' of this machine might have been elastic; and promising experiments have been carried out for a small scale model using the ligament from a horse's neck, which retains much of its great natural elasticity if specially treated. (Bodleian Library)



Gen. E. Schramm's reconstruction of an onager, the dimensions of the various components being calculated from the spring diameter. The arm length is about eight or nine times the spring diameter for the best performance, and has to be of knot-free timber: it is liable to break under the great strain imposed. The buffer is a sack of chaff fixed tightly to the central upright to absorb the shock of the arm's impact. In this reconstruction the buffer framework prevents sideways arm movement.

There is no evidence for the mounting of these machines on wheels. On the one hand, traversing and movement from place to place must have been difficult without them; on the other, the violent recoil would have made re-alignment after every shot necessary unless a wheeled carriage was very firmly wedged in position. (D. Baatz)



listarii had been in Gaul with Julian (r.355–363); they and a unit of cataphracts formed his escort on the way from Autun to Auxerre in AD 356, although they were unsuitable for the task, and were too heavily encumbered to pursue the enemy. When Valentinian I (r.364–375) divided the field army in AD 364, the legion was divided; the *seniores* initially stayed in the West, and the *iuniores* went East. Soon after this a detachment was taken from the *seniores* to become the Boppard garrison. In AD 407 this unit was made a pseudo-comitatensian legion¹ in the field army of Gaul. Meanwhile, in the East, the *ballistarii* from Daphne in Moesia II had been raised to full field army status. Finally, during the reign of Theodosius I (r.379–395) two pseudo-comitatensian legions were raised in the East, one from a garrison force and the other from a detachment from the *ballistarii iuniores*.

THE ONAGER

In this context the introduction of the onager (or the 'scorpion', as it was originally called), made sense. This was a one-spring torsion stone-thrower with one arm which swung upwards. It was therefore easier to make, maintain and use than the twin-spring ballista, and was ideal for an

army in which skilled manpower was at a premium.

Unfortunately, no technical description of the onager has survived. There have been various attempts to reconstruct an onager, all based upon Ammianus' brief, non-technical description. Only two need be discussed: those by Gen. Schramm, and R. Payne-Gallwey.

Each of Schramm's three reconstructions had the buffer which stopped the arm in its upwards and forwards swing set at an angle of 75° to the ground — see the accompanying photograph. For loading the arm was at an angle of 30°, and it released the stone at an angle of about 67½°. The result was that the smaller onager threw missiles 200 m or more. The larger reconstruction threw 1.81 kg stones more than 300 m.

Payne-Gallwey fixed his buffer vertically, and pulled the arm down almost horizontal, as Ammianus described — see accompanying drawing. The missile was released when the arm was at about 45° to the ground. His larger onager threw 8 lb. (3.62 kg) stones over average ranges of 420–430 m, but to nearly 460 m if the spring was fully tightened. E. W. Marsden thought that Payne-Gallwey's reconstruction was the simplest, and therefore

the most likely. Indeed, this onager was more powerful than expected: according to the calibrating formula for twin-spring stone-throwers, a machine with Payne-Gallwey's 20.3 cm-diameter spring would only throw a stone of 2.18 kg.

The trigger mechanism posed considerable problems. Ammianus says that it was released by hitting it with a hammer. Following Schramm's method of reconstruction, the trigger of a large onager would be up to 2 m above the ground; with Payne-Gallwey's reconstruction the arm was nearly horizontal, and the artilleryman would have to bend down to get at it. Even so, both Marsden and Payne-Gallwey decided to use a lanyard release rather than get too close, well remembering the fate of a technician, described by Ammianus. The unfortunate soldier was apparently standing behind an onager when a stone was improperly fitted into the sling; when the spring was released it came out of the machine backwards, smashing the man to pieces.

Marsden did eventually try a hammer, but it tended to knock the arm slightly out of true. Releasing the trigger by hand did not work, as this brought the artilleryman's

head into contact with the arm! So it had to be a long-handled hammer, as a reviewer of Marsden has suggested.

The onager had a number of drawbacks. It had no separate base, and no universal joint; so to re-lay the weapon on a new target must presumably have involved re-aligning the entire machine. This is hard to understand, since it could be very heavy: Payne-Gallwey's larger onager weighed about 2 metric tons, and needed two men to wind down the arm — and the machine described by Ammianus needed eight men, so must have been even more massive. Given a static 'carriage' resting on a platform of turf or brick, which Ammianus tells us was necessary to absorb the violent recoil (the kick of the wild ass, after which the weapon was named), it is hard to understand how it could be traversed in any practical way if it could only be moved as a dead weight by manhandling with levers. There is clearly a gap in our information on this important point.

The reconstructions of Schramm and Payne-Gallwey were smaller, and were operated safely without a special platform; indeed, Schramm's and one of Payne-Gallwey's were mounted on

¹Legiones-pseudocomitatenses were former border defence units transferred to the mobile field armies.

wheels, and still worked successfully. Although Vegetius says that onagers could be carried, ready for action, in four-wheeled ox-carts, he does not say that they were fired from such a position.

Altering the range was a much simpler procedure, achieved by hauling the arm down to different angles, and by adjusting the length of the sling. If a sling less than one-third the length of the arm was used, the stone would be hurled out at a higher elevation over a shorter range. If the sling was longer the angle would be lower, and the stone would have greater velocity and range.

Resiting an onager, though a delicate business, as Ammianus records, was certainly possible under battle conditions. During the siege of Amida in AD 359 the Persian attackers built iron-clad siege-towers with arrow-shooting artillery mounted in their tops. Under cover of night the Romans cautiously moved four onagers to oppose them; and when they

opened fire, the stones shattered the structural joints of the towers and destroyed them. In fact the onager was best suited for siege warfare, and as an anti-personnel weapon in defence it was just as effective as the stone-throwing ballista. In addition to stones, it could hurl blazing baskets of pitch at enemy siege machinery. Besiegers are also known to have used them, Julian employing at least one in the siege of Maiozamalcha in AD 363.

Finally, it is worth noting that even if it was a cumbersome weapon compared with the stone-throwing ballista, the onager was still superior to the medieval mangonel which was developed from it. Payne-Gallwey made a mangonel of exactly the same dimensions as his larger onager; instead of a sling, it had a cup for the missile at the end of the arm. It threw a 3.62 kg stone only 320–330 m, at least 100 m shorter than the onager. [M]

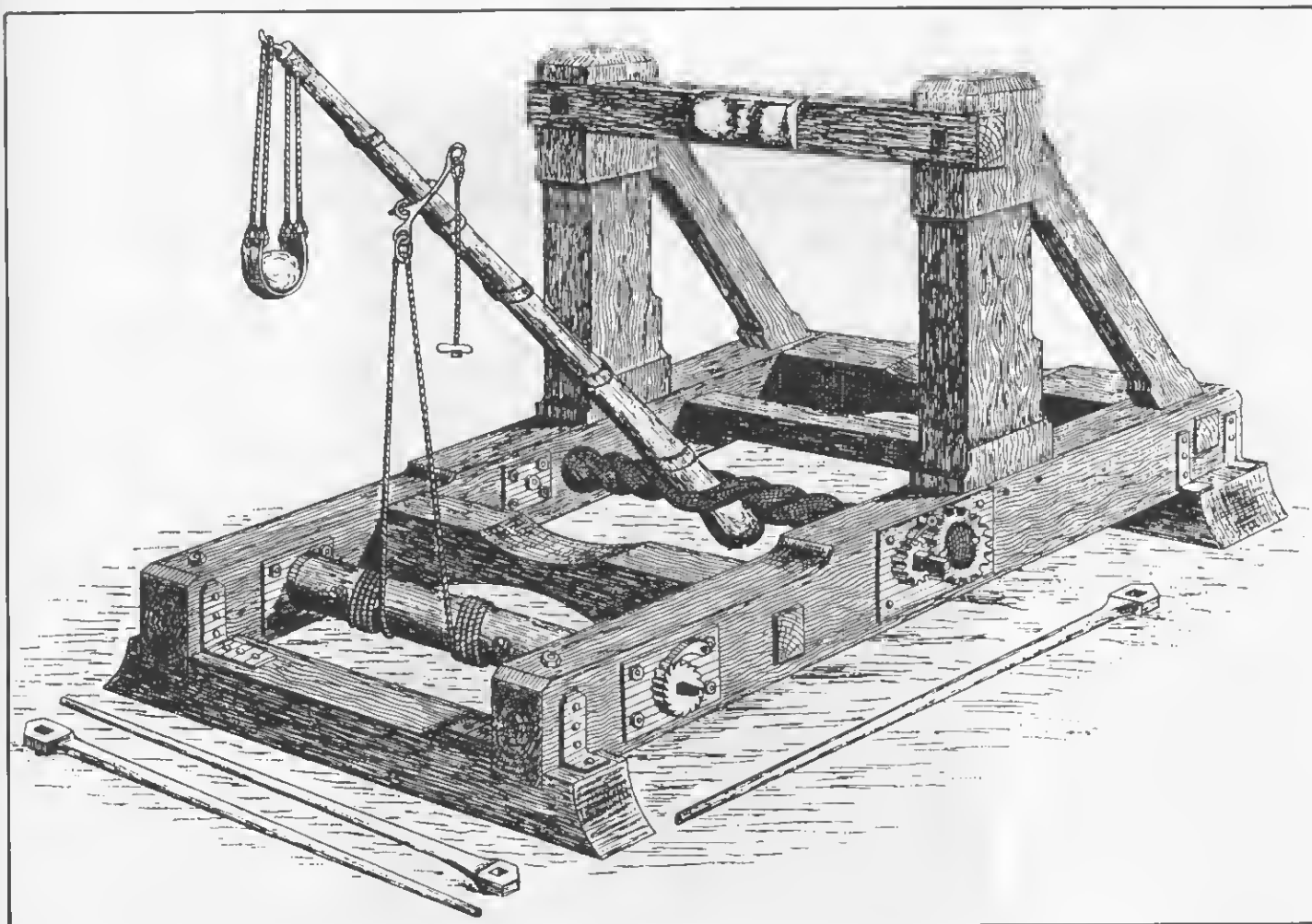
Bibliography: this refers to both Part 1 ('MI' No. 2) and Part 2:

- Ancient sources are collected by E. Marsden.
 E. Schramm: *Die antiken Geschütze der Saalburg*. Nachdruck . . . mit einer Einführung von D. Baatz. [With artillery bibliography up to 1980]. Bad Homburg. Saalburgmuseum, 1980
 R. Payne-Gallwey: *The crossbow, medieval and modern, military and sporting*. Second edition; London. Holland Pr., 1958
 E. W. Marsden: *Greek and Roman artillery: historical development*. Oxford, Clarendon Pr., 1969.
 E. W. Marsden: *Greek and Roman artillery: technical treatises*. Oxford, Clarendon Pr., 1971 [Reviews listed by D. Baatz in Schramm.]
 J. G. Landels: *Engineering in the ancient world*. London, Chatto & Windus, 1978
 W. Soedel & V. Foley: *Ancient catapults*. *Scientific American*, Vol. 240 no. 3 (1970) p. 120–127
 D. Baatz: *Zur Geschützbewaffnung römischer Auxiliartropfen in der frühen und mittleren Kaiserzeit*. *Bonner Jahrbücher*, Bd. 166 (1966) p. 194–207
 N. Gudea & D. Baatz: *Teile spätromischer Ballistae aus Gorvea und Orsova (Rumänien)*. *Saalburg-Jahrbuch*, Bd. 31 (1974) p. 50–72
 D. Baatz: *Recent finds of ancient artillery*. *Britannia*, Vol. IX (1978) p. 1–17
 D. Baatz: *Ein Katapult der legio IV' Macedonica aus Cremona*. *Mitteilungen des Deutschen Archäologischen Instituts. Römische Abteilung*, Bd. 87 (1980) p. 283–299
 D. Baatz & M. Feugère: *Éléments*

- d'une catapulte romaine trouvée à Lyon. Gallia*, Tom. 39 (1981) p. 201–9
 D. Baatz: *Katapultteile aus dem Schiffswrack von Mahdia (Tunesien)*. *Archäologischer Anzeiger*, (1985) p. 677–691
 D. Campbell: *Ballistaria in first to mid-third century Britain: a reappraisal*. *Britannia*, Vol. XV (1984) p. 75–84
 M.W.C. Hassall: *The inventions*. In M.W.C. Hassall (ed.) *De Rebus bellicis*. Pt. 1: Aspects of the *De rebus bellicis*: papers presented to E.A. Thompson. *British Archaeological Reports. International Series*, 63. (Oxford 1979) p. 77–91
 D. Hoffmann: *Das spätromische Bewegungsheer und die Notitia Dignitatum*. 2 vol. *Epigraphische Studien*, 7. (Düsseldorf 1969–70)
 P. Brennan: *Combined legionary detachments as artillery units in late-Roman bridgehead dispositions*. *Chiron*, Bd. 10 (1980) p. 555–567.

Below

Reconstruction by R. Payne-Gallwey. Here the arm's movement is hardly restricted, but its thickness at the base prevents it from slipping out of the torsion spring. The spring was made of bundles of horsehair rope 1.75 cm thick, soaked in oil to cut down friction and wear. The curve of the iron 'finger' at the tip of the arm ensures that the sling will fly off at an angle of 45° and release the stone. The washers and spanners are Payne-Gallwey's own design, and performed extremely well. The scale of this drawing is roughly $\frac{1}{2}$ in. to 1 foot.



The Lower Canada Select Embodied Militia Battalions, 1812-15

RENÉ CHARTRAND
Paintings by GERRY EMBLETON

It is a matter of record that in 1813, at the height of the Napoleonic Wars, a unit of French-speaking infantry wearing King George's red coat captured two United States Navy warships. Thanks to the surviving records and a few precious portraits and artefacts, we may attempt a reconstruction of the appearance of these unlikely troops, whose battlefield achievements may have had strategic consequences far beyond the woods of North America.

Early in the year 1812, relations between Great Britain and the United States had deteriorated to the point that the Canadian authorities were contemplating various measures to bolster the small garrison of British regulars. Besides issuing the usual call for volunteers the Province of Lower Canada (today, Québec) opted for a limited draft of 2,000 bachelors aged between 18 and 30 years, to serve for up to two years in wartime. The provincial legislature voted the sum of £60,000, and authorised Governor-General Sir George Prevost to have militiamen selected and embodied into four battalions during April-May 1812. Actual drafting from the militia would not occur unless there was a shortage of volunteers. The embodied militiamen were allowed the same pay and allowances as the regular troops.¹

Captain Jean-Baptiste Larue, 4th Bn. Lower Canada Select Embodied Militia, c.1813-15. He wears a scarlet coat with dark green collar and gorget ribbons; gold buttons and lace; gold wings on a scarlet ground, with a silver grenade; gilt gorget 'GR' cypher. The grenade indicates that Capt. Larue served with the battalion's grenadier company. Unsigned and undated. (Courtesy Maj. Guy Belleau, Musée du Royal 22^e Régiment, La Citadelle, Québec)

War with the United States was declared in June 1812, and a fifth battalion was authorised to be embodied on 21 September that year. This battalion was reorganised as a light infantry unit styled 'the Canadian Chasseurs' on 12 March 1814.² Finally, a sixth battalion was authorised on 18 February 1813, formed from the three battalions of Québec city militia, to do garrison duty at Québec from

31 March. There it served until disbanded on 4 September 1814.³

The establishment of each battalion was as follows:

1 lieutenant-colonel
2 majors
10 captains
8 ensigns
1 paymaster
1 adjutant
1 quartermaster
1 surgeon
1 assistant surgeon
42 sergeants
10 drummers
800 rank and file.

(The 6th Bn. had only one major, no assistant surgeon, 32 sergeants and 600 rank and file.)

Each battalion had 10 companies: eight 'battalion', one grenadier and one light infantry. On 24 March 1814 the 6th Bn. was reduced in strength to eight companies

(including the flank companies) and the reduced establishment included 26 sergeants, seven drummers and 424 rank and file.⁴

We should also mention the temporary formation of two 'Militia Light Infantry Battalions' ordered on 12 April 1813. These were formed from the flank companies of the first five battalions. The actual existence of these temporary battalions seems to date from 30 June 1813, when a General Order called for the flank companies of the 2nd and 5th Bns., and the 'first' flank company (presumably grenadiers?) of the 3rd to form the 1st Bn. of Militia Light Infantry at Kingston. The same order called for the flank companies of the 1st and 4th and the 'second' flank company of the 3rd to form the 2nd Bn. of Militia Light Infantry at Chambly. This temporary formation, sometimes confused with an additional militia corps, was dissolved on 25 November 1813 and the companies were returned to their respective battalions.⁵

THE MILITIA ON ACTIVE SERVICE

Except for the 6th Bn. at Québec, the battalions were posted mostly to various locations between Montreal and the American border. Their rôle was essentially to help stop enemy incursions towards Montreal, but some elements were also to be found taking part in offensive operations.

A detachment of the 1st Bn. was posted with six companies of the 100th Foot and a few Royal Artillery at Isle-aux-Noix, a fort built on an island in the middle of the narrows of the Richelieu River just north of the American border (today, Fort Lennox National Historic Park).



¹Superior numerals refer to source notes at the end of this article.

The Richelieu flowed into the St. Lawrence, and was the traditional 'invasion route' up from the south.

On 3 June 1813 some men of the 1st Bn. detachment were happily contemplating their discharge, due that day, when the alarm was given. Two armed schooners flying the Stars and Stripes were sailing up the river. The militiamen of the 1st Bn. volunteered their services, and marched off to do battle with the USS *Growler* and *Eagle*.

Over-zealous US Navy officers aboard the schooners had ventured too far. Three gunboats, each mounting a 6-pdr. gun and manned by regular troops, pulled out to engage them. They decided to withdraw; but the river proved too narrow, and when the Americans neared the shore in the course of their awkward manoeuvre, the men of the 1st Bn. posted on the banks poured musket fire into the schooners, which were eventually obliged to strike their colours.

Now enjoying 'naval superiority', the British soon mounted a raid on Plattsburgh, New York, which included small detachments from the 1st and 2nd Battalions. They landed there on 30 July; the American militia vanished; and the British party destroyed all naval and military installations and such booty as could not be shipped back to Isle-aux-Noix. (A small share of prize money was eventually awarded for this action.)

THE BATTLE OF CHÂTEAUGUAY

A far more serious threat was the American attempt to capture Montreal in October 1813. The US Gen. Wade Hampton moved slowly up the Châteauguay River, crossing into Canada with about 5,000 men. Canadian pickets, including two companies of the 2nd Bn., skirmished with US advance parties near Odelltown. On 26 October the Americans came within sight of the first line of *abatis* field fortifications across the road which followed the west bank of the



Officer's gilt gorget and belt plate of the 6th Bn., 1813-14. The belt plate is gilt with a silver crown, lettering, numeral and scroll. (M.S.M. Ferguson Coll., Ottawa; photo Parks Canada)

Below left:

Brass belt plate for rank and file, 1st Bn. Lower Canada Select Embodied Militia, c. 1812-15. (Parks Canada)



river, manned by companies of the Canadian Voltigeurs and the Canadian Fencibles. Succeeding lines were held by most of the 2nd Bn. SEM and a company of the 5th.

A 1,500-strong American column was sent into the woods on the east bank to turn the Canadian position. But it was in these woods that the Canadian commander, Lt.Col. Charles de Salaberry, had posted the light companies of the 1st and 3rd Bns. and a company of hastily-raised local militia ('Habitants Chasseurs').

Capt. Daly's light company of the 3rd Bn. and Capt. Bruyère's Habitants Chasseurs engaged the head of the United States column, which had become lost in the woods, and a series of sharp squad encounters followed among the trees.

The American soldiers were taken by surprise, but Col. Purdy of the 4th US Infantry rallied his men. By then the main American force was deploying in front of the *abatis* on the west bank, and firing had broken out there as well. Sensing the critical

moment, De Salaberry shouted across the river to Daly in French, telling him to press the flanking American troops.

With considerable courage Daly and Bruyère rallied their little force — about 90 men only — and formed them into line under the trees. They advanced; fired a volley into the Americans; and then charged them with fixed bayonets. Daly and Bruyère fell wounded almost at once, and Lt. Dezery of the 3rd Bn. shortly afterwards. Lt. Schiller assumed command; and is said to have actually beheaded an American officer during the hand-to-hand fighting which followed. More US troops were now coming up, and the Canadians were forced to give ground slowly; but as Purdy's men emerged from the cover of the woods on to the open river bank, they were caught by a withering enfilading fire from De Salaberry's men across the narrow river. They scattered, and fell back into the woods in some confusion.

The American flanking movement had failed; the US forces called it a day, and retreated to their border. Capt. Daly's company of the 3rd Bn. SEM had suffered two officers wounded, two rank and file killed, and 10 wounded or missing out of about 50 men engaged: half of the total Canadian casualties.⁶

By European standards the battle of Châteauguay was a small skirmish; but its strategic results were important. Not only had a powerful

American column been thwarted; but its planned junction with another and even stronger force (under Maj.Gen. James Wilkinson, moving towards Montreal from Sackett's Harbour) had been averted. Had Montreal fallen, Canada would have been cut in two; and for Britain, that might have meant the end of the main source of timber used to build the Royal Navy's ships.

In order — among other objectives — to secure that supply, some 13,000 men from Wellington's Peninsula army were shipped to Canada in 1814. An attack on Plattsburgh was decided upon; but Sir George Prevost, while an able administrator, was no Wellington, and this attempt was defeated in September 1814 by the brilliant young American Brig.Gen. Alexander Macomb (later to become C-in-C of the US Army). The 3rd Bn. SEM formed part of Prevost's 10,000-man force, but had no chance to distinguish themselves. With the rest of the army they marched back to Canada, from what turned out to be the last campaign of the 'American War'.⁷

UNIFORMS

A few inspection reports have survived, and give us a glimpse of the conditions prevailing in the battalions. In August 1812 the 1st Bn. was found with weapons in bad repair, and its clothing and accoutrements were also described as 'very bad'. In December things had not improved markedly: Gen. de Rottenburg 'found the 1st Batt. Incorporated Militia in so filthy a state, and so very deficient in necessaries . . .'. The 2nd Bn. was in fairly good order in August 1812, but with weapons in bad

repair. In July 1813 Gen. Sheaffe reported 'that progress has been made both in its discipline and its interior economy'.

The 3rd Bn. had dirty weapons in bad repair and very bad clothing and accoutrements in August 1812, and no real improvement was noted by December. The 4th was reported 'clean and in high order' in December 1812.⁸ On 30 October 1813 the 5th Bn. was reported as being without knapsacks, arms in tolerable order, accoutrements showing neglect, the barracks 'not in good order', and 'those of the few officers present, did not seem occupied'.⁹ Only the 6th Bn. seems to have won acclaim, with its 'appearance . . . very little inferior to that of Regiments of the Line', according to the *Quebec Gazette* of 23 September 1813.

A good many of the problems revealed by these reports were the result of insufficient supplies during the first year of the war, as well as of inexperience. In the 5th Bn. (nicknamed 'The Devil's Own', because most of its officers were lawyers!), progress was fairly good. Most of the officers were replaced after about a year, however, and from being one of the best units the 5th then deteriorated to being the worst during the latter part of 1813. It was finally reorganised as the 'Canadian Chasseurs' in March 1814, and took part in the Plattsburg expedition of September 1814.¹⁰

The first uniforms worn by these battalions are obscure. We know that in spite of the *habitant's* dislike of the red coat,¹¹ the supplies for the first 2,000 levies included 'red cloth . . . brown linen for lining . . . trousers . . . buttons . . . hats or caps . . . cockades . . . private's loopings', and haversacks, as well as fifes and drums and sergeants' pikes.¹² There is no definite information on the facings of the battalions in 1812, except the instructions for the officers' uniforms of the 2nd Bn., which called for a red coat with white collar, cuffs

Pierre-René Boucher de la Bruère of the 2nd Bn., who was listed as captain on 25 May 1812 and major on 25 March 1813. Here he wears the scarlet coat faced with white recorded as worn by officers of that battalion in 1812-13. During that period there is some evidence that the rank and file wore olive green faced with red. In March 1814 the battalion was ordered red coats faced with yellow. The Musée Pierre Boucher in Trois-Rivières has this officer's 1814-15 coat, which is scarlet faced with pale yellow, with gold buttons and gold lace on the collar; the crimson sash worn in this portrait is also preserved in the museum. (Painting by J. Cironard, 1813, in the Musée du Québec)



Left:

Officer, Light Company, 3rd Battalion, Lower Canada Select Embodied Militia: the company which distinguished itself in the skirmish in the woods on the east bank of the Châteauguay River on 26 October 1813. Officers of these units bought their uniforms from tailors in Montreal and Québec who usually imported gold lace, buttons, wings, epaulettes, sashes, etc. from England. From some portraits and surviving uniforms it can be seen that a popular and inexpensive way to trim officers' uniforms, especially for wear in the field, was to edge the collar and cuffs with gold lace, as illustrated here. Laced buttonholes were, of course, also popular. (C. A. Embleton, courtesy Parks Canada)



Above:

Private, Light Company, 3rd Battalion, Lower Canada Select Embodied Militia, 1813. At a glance, the uniforms worn by these men followed standard British Line practice. Some details are worth noting, however. There is no evidence that coloured lines were incorporated into the weave of the 'lace', which appears to have been plain

white throughout. Blue trousers were issued in 1813, instead of the grey ones we normally associate with British infantry. Muskets seem to have been old when issued in 1812, and we have shown here the 42-in. Short Land Pattern instead of the newer India Pattern. (G. A. Embleton, courtesy Parks Canada)

and lapels; thin gold lace edging collar and cuffs; hat according to British regulations; but no epaulettes or sashes for captains and subalterns 'for this year'.¹³ Portraits of officers of the 2nd Bn. show that epaulettes and sashes were in wear by 1813.¹⁴

Red cloth soon became scarce, and in 1813 we find evidence that green was used for the enlisted men's coats in some battalions. Deserters from the 2nd Bn. were described in May and June 1813 as wearing round hats; olive-coloured jackets faced red and trimmed with lace; and blue pantaloons.¹⁵ The 3rd Bn. received in May 1813 green jackets; blue pantaloons; caps [shakos] without 'feathers rosettes & tufts'; and moccasins.¹⁶ The company of the 5th present at Châteauguay was also dressed in green.¹⁷ The 1st Bn. managed to find red cloth, purchased old coats of the 103rd Foot, and was even hoping for surplus coats from the 8th Foot in March 1813, and thus probably did not wear green.¹⁸ The 4th Bn. was clothed in an unspecified colour during June 1813, but later embellished its uniform with 'wings' for the whole battalion.¹⁹

During the summer of 1813 a considerable quantity of militia clothing arrived at Quebec from England. On 30 June the flank companies of the first five battalions and the complete 6th Bn. were ordered an issue of these stores, comprising: 'Caps & plumes, Red Coats, Waistcoats with sleeves, Blue Trowsers, Forage Caps, Gaiters, Linen Shirts, Stocking, Shoes, Knapsacks', and 'Stocks and Clasps'. The facings were directed to be as follows:²⁰

- 1st Bn. . . . Blue
- 2nd Bn. . . . Light green
- 3rd Bn. . . . Yellow
- 4th Bn. . . . Dark green
- 5th Bn. . . . Black
- 6th Bn. . . . Black

We have seen that the first five battalions had been clothed earlier in the year, some in green, but they were probably missing accessories, since 'boots, trowsers, gai-



Louis J. De Beaujeu, 2nd Bn. Lower Canada SEM, wearing scarlet faced with white, gold buttons and lace — note collar trim. De Beaujeu was named captain on 25 May 1812 and major on 17 October that year. (Painting by J. Girouard, 1813, in the Musée du Québec)

ters, Caps Compleat and Forage Caps' were ordered issued to their battalion companies on 1 August 1813.²¹

The last issue to the battalions appears to have been made in March 1814, consisting of 'Regimental Coats, Trowsers, gaiters & Bucket Caps'. The facings were then directed to be as follows:²²

- 1st Bn. . . . Blue
- 2nd Bn. . . . Yellow
- 3rd Bn. . . . Green
- 4th Bn. . . . Green

The coats were red, as in the previous issue; and the 'trowsers' may have been blue and/or grey.²³

The general style of the uniforms was obviously very close to British Line infantry; however, it seems that they never wore the 'Belgic' or 'Waterloo' shako. Canadian officers, too, tried to emulate their British counterparts in their uniforms, the details no doubt being dictated by the length of one's purse as much as by the breadth of one's fancy. It seems that the officers of all battalions wore gold buttons and lace.²⁴

The battalions did not carry colours. Prévost wrote to England on 30 October 1813 asking for five pairs of colours as a reward for the good conduct of the Select Embodied Militia at Châteauguay; but England had more urgent worries, and the colours arrived only in October 1818!²⁵

Front and rear views of a remarkable relic of the battle of Châteauguay. Lt. (later Capt.) Francois Dezery of the 3rd Bn. was wounded in the action on the east bank of the river on 26 October 1813, probably in the left arm or shoulder — bloodstains can still be seen on the lining in this area, and it seems obvious that the left sleeve was torn out at the seam in order to treat the wound. The coat is of the older pattern with long tails, and thus predates British 1812 regulations — though to what extent these would have been obeyed in Canada is questionable. It is scarlet with yellow cuffs, lapels and collar and white lining. The lace is silver with a black central line, instead of the more usual gold lace. Note the crude 'double heart' turnback devices; and the fact that only the top four buttonholes on the lapels are laced, confirming that the lapels were habitually worn buttoned closed except for two small exposed triangles of facing at the top. In all likelihood this is a second-hand Army officer's coat purchased by Dezery, possibly for field use. Cf. The British Infantry Officer of the Peninsular War, 'MI' Nos. 2 & 3. (Canadian War Museum, National Museum of Canada 79-4799 & 79-4801)



The remaining four battalions of Select Embodied Militia, together with all other Provincial corps, were ordered disbanded by General Order on 1 March 1815 as a result of the signing of the Treaty of Ghent which ended

the war with the United States.²⁶ Much less well known than the Canadian Voltigeurs, yet also composed largely of French Canadians, these battalions represent an important if somewhat forgotten chapter in the military heritage of early Canada. [MI]

Sources:

- (1) *Some account of the Public life of the Late Lieutenant General Sir George Prevost, Bart.* (London 1823), pp. 19-20; L. H. Irving, *Officers of the British Forces in Canada, 1812-1815*, pp. 118-130 lists the names and dates of commissions of the officers (Welland, 1908); *Montreal Gazette*, 13 April 1812.
- (2) Public Archives of Canada, (henceforth PAC), RG8, C1171, p. 207; Irving, pp. 130, 133.
- (3) *Quebec Gazette*, 25 March 1813; *Le Spectateur*, 13 September 1814.
- (4) PAC, RG8, C1220, p. 318; RG9, 1A3 vol. 5, p. 231; *Quebec Gazette*, 25 March 1813. Each battalion had a sergeant major, a quarter master sergeant, a drum major and the usual proportion of corporals, etc., as in the Line.
- (5) PAC, RG8, C1220, p. 318; Irving, pp. 116-117.
- (6) Purdy's force in this action comprised some detached companies of the 5th, 12th and 13th Infantry. He was to write of Hampton's force as a whole that it was '... composed principally of recruits who had been but a short time in the service, and

had not been exercised with that rigid discipline so essentially necessary to constitute the soldier. They had indeed been taught various evolutions, but a spirit of subordination was foreign to their views.'

- (7) J. M. Hitsman, *The Incredible War of 1812* (Toronto, 1965) pp. 137, 145; W. James, *A Full and Correct Account of the Military Occurrences of the Late War Between Great Britain and the United States of America* (London, 1818) p. 305; Irving, p. 124; PAC, RG8, C703, p. 188, C1172A, p. 26; C1221, p. 10; Victor Suthren, 'The Battle of Châteauguay', *Canadian Historic Sites*, No. 11 (Ottawa, 1974) pp. 133-135.

- (8) PAC, RG8, C677, pp. 240, 248, C703, p. 114; RG9, 1A1, vol. 79, pp. 68-70.

- (9) PAC, MG24, G45, vol. 8, p. 1873.

- (10) Etienne Pascal Taché, *Quelques réflexions sur l'organisation des volontaires et de la milice de cette province* (Québec, 1863), pp. 7-9; Irving, p. 133.

- (11) PAC, RG9, 1A1, v. 3, Lt. Col. Hertel de Rouville to Francois Vassal de Monviel, Chambly, 17 May 1812.

- (12) PAC, RG8, C1218, pp. 235, 279, 329.

- (13) PAC, RG9, 1A1, v. 3, de Rouville to de Monviel, 13 June 1812. Irving, op. cit., and CCP Lawson's *A History of the Uniforms of the British Army* (London, 1967), vol. V, p. 114 give the four battalions facings obviously based on Prevost's request for uniforms from England, written on 21 November 1812 at Chambly, for 2,000 Embodied Militia 'one quarter of the whole to be with blue facings, one quarter with green facings, one quarter with light buff facings, and one quarter with black facings.' (PAC, Q119, p. 50). This and other requests resulted in the 1813 shipment of uniforms. Except for the 2nd Battalion, there is no direct evidence as to the facings in 1812.

- (14) Watercolours of officers of the 2nd Battalion by J. Girouard, 1813 in the Musée de Québec.

- (15) PAC, MG23, G111, v. 2, p. 253; RG9, 1A1, V. 72, de Monviel to Lt. Col. Noel, Québec, 14 June 1813.

- (16) PAC, RG8, C703, p. 85.

- (17) PAC, RG8, C680, p. 333.

- (18) PAC, RG8, C1220, p. 250; RG9, 1B4, v. 4, Lt. Col. Robinson to Lt. Col. Foster, York, 8 April 1814.

- (19) PAC, RG8, C703, p. 251; RG9, 1A1, vo. 10, Lt. Col. Royer to Monviel, 11 September 1813.

- (20) PAC, RG8, C1170, p. 493; C1221, p. 71.

- (21) PAC, RG8, C1203½, p. 90.

- (22) PAC, RG8, C1223, pp. 10-11.

- The 4th Battalion reported in September 1814 that it had not received any clothing since June 1813.

- (23) PAC, RG8, C1221, p. 283.

- (24) Gold buttons and lace are shown on portraits by Girouard of officers of the 2nd Battalion; tunic attributed to 3rd (Château Ramezay, Montréal); an officer's tunic of the 6th (Perth, Ontario Museum).

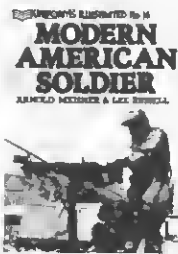
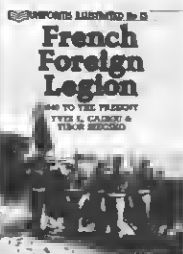
- (25) PAC, RG8, C704, p. 295; Q122, p. 255.

- (26) PAC, RG8, C1172, p. 128a.

45



The latest books from ARMS & ARMOUR PRESS



No. 15: THE FRENCH FOREIGN, LEGION, 1940 TO THE PRESENT

Y L Cadiou and Tibor Szecsko

The rich variety of the Legion's uniform items and regimental regalia is captured in this exciting new volume which follows the campaigns of that most famous elite corps in a wide range of theatres, from Norway, Indo-China and North Africa through South America and the South Pacific and including recent operations in Zaire, the Lebanon and Chad. Super value for modellers at only £3.95!

No. 16: MODERN AMERICAN SOLDIER

Lee E Russell and Arnold Meisner

The comprehensive selection of photographs in this fascinating volume shows the wide variety of dress that may be worn by the American soldier of today. Right up to date, including photographs of the invasion of Grenada, MODERN AMERICAN SOLDIER fills an important gap in the modern combat pictorial reference library. Not to be missed!

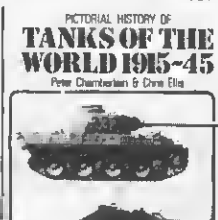
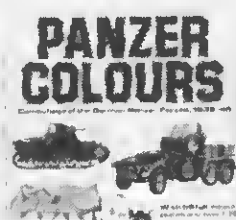
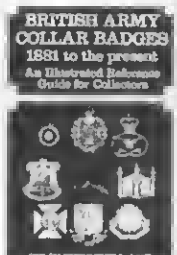
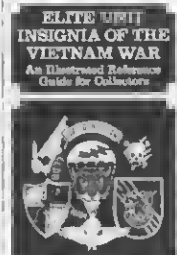
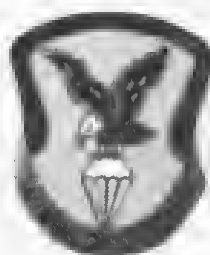
Both books 10in. x 7in.; 72 pages including 8 in full colour; 130 illustrations. £3.95.

THE ROAD TO KABUL. The Second Afghan War, 1878-1881

Brian Robson

Of Britain's imperial wars the campaigns in Afghanistan present some of the most vivid contrasts — of heroism and sacrifice, incompetence and fully, disastrous defeat and glorious victory. Illustrated with contemporary photographs and with fourteen maps and plans, this major study of the Second Afghan War, the first to appear for over three-quarters of a century, is based upon exhaustive study of primary source material and throws new light on the war that was to cost the lives of thousands of Afghans, and to come close to bankrupting the Indian Government. With appendices covering uniforms, medals, casualties and the units taking part, this is a book that in scope, scholarship and authority is not likely to be superseded for many years to come. 9in. x 6in.; 336 pages including 16 pages of plates and 14 maps; £19.95.

LOOK! TWO CLASSICS AVAILABLE AGAIN!



ILLUSTRATED REFERENCE GUIDES

ELITE UNIT INSIGNIA OF THE VIETNAM WAR *Leroy Thompson*

During the Vietnam War, the diversity of units assigned to carry out special missions engendered a vast number of colourful and interesting insignia. Literally hundreds of badges and patches were designed for such units as the US and South Vietnamese Airborne, Long Range Patrols, Rangers, SEALs and reconnaissance troops. This new volume depicts more than 200 examples, and provides an up-to-date guide to the price that the collector is likely to pay for each item. 8½in. x 5½in.; 60 pages; 245 illustrations. £6.95.

BRITISH ARMY COLLAR BADGES, 1881 TO THE PRESENT

Colin Churchill and Ray Westlake

More than 400 badges are depicted — life size — in this, the first book devoted to the collecting of British collar badges. The collar badge has now become firmly established as an item of major interest and represents an expanding area of military collecting and this book will be of value both to established collectors and beginners. 8½in. x 5½in.; 64 pages; 426 illustrations. £6.95 October.

PICTORIAL HISTORY OF TANKS OF THE WORLD, 1915-1945.

P. Chamberlain and C. Ellis

A comprehensive encyclopedia of the world's tracked AFVs in two world wars. Each model and mark is illustrated and described, with details of dimensions, armament speed and development. As a source book for the study of AFV evolution, this volume is unrivalled. 11½in. x 9in.; 256 pages; OVER 1,000 ILLUSTRATIONS! £14.95.

PANZER COLOURS: Camouflage of the German Panzer Forces, 1939-45.

B. Culver and B. Murphy

With 69 colour illustrations and over 170 photographs, PANZER COLOURS presents the most comprehensive and detailed account of German armour camouflage in World War Two yet published. Essential reference material for modellers! 11in. x 8½in.; 96 pages; 239 ills. £7.95.

POSTAGE ONLY £1.00 per order! Send for a free illustrated catalogue today!

READER
PRIORITY
ORDER FORM

To: Arms and Armour Press Dept. 601/1
Link House, West St, Poole, Dorset DH15 1LL

Please send me

I enclose cheque/PO. for £

Please charge my Access/Visa no

Card expiry date

Signature

Please note publication dates and allow 28 days for delivery, 35 days outside U.K. Prices and publication dates subject to change

Please add £1.00 (U.K.), £1.50 (EXPORT) to cover postage.

Overseas orders are sent by surface post

Airmail charges available on request.

Tick here for free catalogue ☐

From Name

Address

Order ref 601/1



Arms & Armour Press — a member of the Link House Group



MIL-ART FIGURE SERIES

80mm MILITARY FIGURE KITS

F35 Corporal, 2nd REP, French Foreign Legion, 1982
F36 Lieutenant, 11th Hussars, India, c.1890 (illustrated)
F37 LRRP, US 101st Airborne Division, Vietnam, 1968
F38 Trooper, Scottish Horse, Boer War, 1901 (illustrated)
F39 Officer, 3rd Scout Lancers, French Imperial Guard, 1813.
F40 S.S. Panzergranadier, Ardennes, 1944. (Price-£8.50)
The above kits are available at £7.50 each including postage and packing in UK. Overseas — please add 15% for surface or 25% for air mail.

54mm MILITARY FIGURE KITS

V1 Viet Cong, Main Force, Vietnam, 1966. (Armed with RPG7)
V2 Radio-Operator, South Vietnamese Rangers, Vietnam, 1968
V3 Light Weapons Specialist, US Special Forces, Vietnam, 1966
V4 Private, Australian Infantry, Vietnam, 1968
V5 Sergeant, US Special Forces, Son Tay Raid, Vietnam, 1970
V6 Sniper, US Marines, Vietnam, 1969
V7 US Navy SEAL, Vietnam (Armed with Stoner LMG)
V8 Helicopter Pilot, US 1st Air Cavalry Division, Vietnam, 1966
V9 M60 Machine-gunner, US Infantry, Vietnam, 1969
V10 Marine, Tet Offensive, Vietnam, 1968
The above kits are available at £3.10 each plus 10% postage and packing in UK. Overseas — please add 15% for surface or 25% for air mail.

Kits are available from local model shops or direct from:
MIL-ART, 120 ASHLEY ROAD, DOVER COURT, HARWICH, ESSEX, ENGLAND CO12 4AR. Trade Enquiries Welcome

REGIMENTS OF WATERLOO

TOY TYPE NAPOLEONIC SOLOIERS

An ever growing range of figures depicting the regiments of all armies involved in the Waterloo campaign. Sold as boxed individuals or boxed sets, there are some 40 subjects already covered. Send £1 for lists and colour photographs (refundable against first order)

Other products in our range include:-

ARTISAN figures. A range of white metal kits of various subjects in scales from 54mm to 100mm. REVO 25mm wargames figures and flags. SAE or IRCs for lists.

WHITTLESEY MINIATURES/ARTISAN
6 St Mary's Street, Whittlesey,
Nr. Peterborough, Cambs.



MILITARY ANTIQUES

27 The Mall, Upper Street,
Islington, London N1
Tel: 01-359-2224

Specialising in First and Second
World War Militaria. We stock a
large selection of Helmets, Uniforms,
Edged Weapons, Equipment, and many other
interesting items for the collector.

Opening hours: Tuesday – Saturday
10.30 a.m. – 5.00 p.m.

'Camouflaged Uniforms of the Waffen-SS' (Part 1)

J. F. Borsarello & D. Lassus

Although nearly 50 years have passed since the first appearance of Waffen-SS camouflaged combat clothing, to date no serious study has been published for the guidance of collectors, enthusiasts or military historians. Guesswork, and the inaccurate reconstructions of film companies, have confused the issue.

DR. J. F. BORSARELLO, a doctor of medicine in Paris, France, is without doubt the leading expert on camouflage uniforms in the world today. His own collection exceeds 200 uniforms, and includes some of the finest surviving examples. He has been ably assisted in this, his first book-length work, by **DENIS LASSUS**, another widely respected specialist researcher and writer. Both have earned international reputations by their many important articles in Continental military journals.

'CAMOUFLAGED UNIFORMS OF THE WAFFEN-SS'
Part 1 is the first of two volumes, and deals with 'Oak Leaf' and 'Plane Tree' patterns. Part 2 will cover 'Buried Edge', 'Palm' and 'Flower' patterns, and the 1943/44 'Pea' pattern.

Each volume consists of 32 pages of high-quality 135gsm art paper, with no less than **16 pages in full colour** of actual examples of each type of camouflage pattern. There are also nearly **50 black-and-white photographs** showing the camouflaged uniforms being worn in action.

'CAMOUFLAGED UNIFORMS OF THE WAFFEN-SS'
(Pt.1) by Dr. J. F. Borsarello & Denis Lassus

Price: £5.95 UK P&P: £1 Overseas (surface): £1.50

GALAGO PUBLISHING LTD.

2nd Floor, Bromley Shopping Hall,
16-20 Widmore Road, Bromley, Kent BR1
1RY, UK

MOTOR BOOKS 33 (M) ST. MARTIN'S COURT, LONDON WC2N 4AL. PHONE: 01-836 5376 OR 6728

SDME NEW TITLES IN OUR LISTS:

Japanese Polearms	£20.00
Saracen Archery (Mameluke, 1368)	£20.00
The Flintlock, Its Origin & Development	£20.00
European Security in the Nuclear Age	£22.50
Occupied France (Collab. & Resist.)	£3.25
The W.W.2 Combat Film: Anatomy of a Genre	£24.95
Your True Marcus: Letters of a Jewish Colonel	£11.75
Strategy and Arms Control	£11.50
Atlas of Global Strategy (P/B)	£9.95
III. Guide to German Decorations and Insignia	£2.00
Canadian Exp Forces Cap Badges	£5.00
1st Marine Division 41-45 (Ven. 8)	£3.95
Symbol and Ceremony in Streikkräften	£12.95
The Shotgun: History & Development	£15.00
Battle Honours of the British and Commonwealth Armies	£45.00
From Alexandria to Ladysmith with the 87th	£17.95
Military Notes, Dutch Republic South Africa	£19.95
The 5th Royal Irish Lancers in South Africa 1899-1902 (Facsimile)	£15.95
Naval Brigade Despatches (South Africa)	£19.95
Fort Nelson: History and Description	95
Freshwater Redoubt	75
World Bayonets 1800-Present (97/88)	£6.95
Units of the French Foreign Leg.	£5.95
Elite Unit Insignia of Vietnam War	£6.95
Mad Dogs: US Raids on Libya (P/B)	£3.50
Small Arms of the World (12th Ed.)	£25.00
The Road to Kabul: 2nd Afg. War.	£19.95
W. S. Churchill Vol. 7: Rd to Victory	£25.00
Obersalzberg bis 1933- Heute (Trilingual)	£7.95
Obersalzberg & 3rd Reich (Photos)	£5.95
Eagle's Nest (From Hitler-Present)	£5.95
Napoleon's Artillery (MAA 53)	£3.95
George Washington's Army MAA19	£3.95
US Army 1900-1920 (MAA 92)	£3.95
The Subaltern Officer (Ltd. Ed. Facs. 1925)	£20.00
War, An Examination (based TV series)	£15.00
An Engineer Officer under Wellington in the Peninsula	£8.50
The Triple Nickels (US All-Black Paras)	£12.70
Intelligence Officer in the Peninsula	£12.95
Simkins' Soldiers V.D.O.L.: Infantry	£12.95
Sov. Grd. Forces: Operational Assessment	£25.00
A small War in the Balkans	£10.95
Strategic Defences (Mil. Use of Space)	£8.95
GCHQ: Secret Wireless War 1900-89	£12.95
Dilemmas of the Desert War 40-42	£14.95
Brassey's War Annual 1: (1995-86)	£8.95
The Soviet Way of Warfare	£16.95
Hitler's Samurai: Waffen-SS (P/B)	£6.99
Island at War (Manx Nation 14-18)	£12.00
Vietnam War Almanac	£16.95
Tank War 1939-45	£12.95
Modern American Soldier (Unit. 16)	£3.95
French Foreign Legion (Unit. 11, 15)	£3.95
Myriad Faces of War	£35.00
Jones Infantry Weapons 1986-87	£68.50
The Steel Bonnets (Border Reivers)	£12.95
Revolt in the Desert (P/B)	£5.95
Encyc. of Mil. Hist. 3500 BC to Present (2nd Edn.)	£32.50
History of Australia in War of 14-18	
Vol. 1: The Story of ANZAC (P/B)	£9.95
Vol. 2: The Story of ANZAC (P/B)	£9.95
Vol. 3: The A.I.F. in France (P/B)	£9.95
Vol. 4: The A.I.F. in France (P/B)	£9.95
Vol. 5: The A.I.F. in France (P/B)	£9.95
Vol. 6: The A.I.F. in France (P/B)	£9.95
Vol. 7: The A.I.F. in Sinai & Palestine (P/B)	£9.95
Vol. 8: The Australian Flying Corps	£9.95
English Pistols & Revolvers	£10.00
L'Épopée Moderne de la Légion Étrangère 1940-76	£34.95
Fort Victoria 1952-1969	£2.95
III. Hist. of the American Civil War	£12.95
Das Maschinen Gewehr	£12.95
Granadoel Mortars in the Civil War	£2.95
The Crisis in the Army 1647	£2.95

AT LAST! Bender has reprinted 'Uniforms, Organisation & History of the Waffen-SS' Vols. 1 to 5 at £17.97 each.

Armour & Weapons in the Middle Ages	£10.00
Japanese Sword Fittings (Naunton Collection)	£37.50
The Manufacture of Armour & Helmets in 16th Century Japan	£20.00
The Armour Book of Honcho-Gunkiko (Jap.)	£20.00

PRE 19th CENTURY

The Roman Soldier	£6.95
Hadrian's Wall in the days of the Romans	£15.00
Hannibal's Campaigns	£3.95
The Barbarians (The Dark Ages)	£10.95
Some Feudal Coats of Arms	£8.95
Armies Ancient Near East 300 BC-539 BC (Stilman F.)	£10.50
Armies & Enemies of Ancient China	£7.95
Armies of the Middle Ages Vol 1	£10.50
Armies of the Middle Ages Vol 2	£10.50
Armies of the Macedonian and Punic Wars	£9.95
The Art of War (Sun Tzu)	£4.95
Armies of the Greek & Persian Wars	£5.85
Armies of the Dark Ages 600-1066	£5.85
The Armies & Enemies of Imperial Rome	£6.65
Medieval Military Dress	£4.95
Treasures from the Tower of London	£3.50
Die Armee Augustus des Starken	£11.95
Inf-Regt Friedrich des Grossen 1756-63	£39.50
Kav-Regt Friedrich des Grossen 1756-63	£39.50
The Era of the American Revolution	£20.95
Simkin's Uniforms of the British Army:	
The Cavalry Regiments	£14.95
The Infantry Regiments	£14.95
Inf Units Brit Army 1 Series 1660-1790	£18.00
British Military Uniforms 1768-96	£11.95
Equipements Militaires de 1600 a 1970	£29.95
Origins of War - Stone Age to Alexander	£12.50
Siege Warfare/The Fortress 1494-1660 (Duffy C.)	£12.95
The Fortress in the Age of Vauban and Frederick the Great 1660-1789 (Duffy C.)	£30.00
Military Architecture	£9.95
The Dutch Forts of Sri Lanka	£19.00
The Art of War (Trans from the French) (Baron de Jomini)	£46.75
War in the Middle Ages	£17.50
Some Feudal Lords & their Seals	£12.95
Medieval Warfare	£14.95
Crecy 1346 - Autopsie D'une Bataille	£19.95
The Book of the Medieval Knight	£12.95
Essay on the Military Architecture of the Middle Ages: Viollet-La-Duc (Facsimile R/P)	£26.50
Regulations for the Prussian Infantry	£37.95
Officers Manual (Military Plans 1800) (Trans. from German)	£26.50
Anglia Rediviva (Ltd Edn R/P from 1647)	£20.00
From Hastings to Culloden	£12.00
Britains Army in India	£10.95
The Wer of the Roses	£4.95
Annals of a Fortress	£15.00
Strongholds of the Realm	£7.50
Castles & Cannon	£37.95
The Revolutionary War	£3.95
The Revolutionary War	£8.95
Battles of the American Revolution	£7.95
Reconsiderations on Revolutionary War	£34.95
The Spirit of 'Seventy Six	£11.95
The Winter Soldiers	£9.95
American Revolution-Picture Source Book	£5.95
Die Deutschen Truppen im Amerikanischen Unabhängigkeitskrieg 1775-1783	£12.95
New Yorks Forts in the Revolution	£25.50
General John Burgoyne	£16.50
The Military Roads in Scotland	£7.95
The Book of the Samurai	£12.95
The 30 Years War	£19.95
Marlborough as Military Commander	£9.95
Die Antange der Artillerie	£10.95

The English Civil War	£3.50
Atlas of the English Civil War	£12.95
Leaders of the Civil War 1642-1649	£10.00
Fairfax - General of Parliament's Forces	£13.50
By the Sword Divided - English Civil War	£11.95
Military Engineering - Civil War 1642-9	£9.95
The Great & Close Siege of York 1644	£7.50
The Battle of Marston Moor 1644	£9.95
The Civil War in Worcestershire 1642-46	£7.95
Naseby 1645 - The Campaign & The Battle	£14.95
The Siege of Gloucester	£3.45
The Battle of Tewkesbury	£3.45
The Kings War 1641-1647	£9.95
Army Lists of the Roundheads & Cavaliers	£7.50
The English Civil War 1642-51 (III Hist)	£10.95
Sedgemoor 1685	£2.95
Sedgemoor 1685 - An Account & Anthology	£14.95
English Weapons and Warfare 449-1660	£9.50
Battles in Britain 1066-1746	£9.95
Traveller's Guide to the Battlefields of Britain	£9.95
Battles of the '45	£9.95
The Monmouth Rebellion (A Guide)	£4.95
Renaissance Armies 1480-1650	£7.95
Frederick the Great	£17.95
The Soldier's Manual	£13.50

NAPOLÉONIC STUDIES

Les Uniformes du Premier Empire	
Tome 1/Troupes A Pied	£19.95
Tome 2/Troupes A Cheval	£22.50
Tome 3/Les Cuirassiers	£25.95
Tome 4/L'Infanterie	£34.95
Tome 5/La Cavalerie Legere	£32.95
Tome 6/Dragons et Guides	£29.95
Tome 7/Etat-Major et Service de Sante	£22.50
Tome 8/Gardes D'Honneur et Troupes	£24.95
Tome 9/La Maison de l'Empereur	£27.95
Arms & Uniforms - Napoleonic Wars	
Part 1	£5.95
Arms & Uniforms - Napoleonic Wars	
Part 2	£5.95
Uniforms of Napoleonic Wars 1796-1814	£5.95
Le Grand Livre de Napoleon (2 Vol Set)	£49.95
The Wars of Napoleon	£14.95
Napoleon's Marshals (P/B)	£6.95
The Commander A Life of Barclay de Tolly	£12.95
Napoleons Campaigns in Miniature	£9.95
Memoirs of General Count Rapp (Facsimile Edition of 300 Copies)	£19.95
Prelude to Fame	£7.95
Napoleon at War (Selected Writings)	£19.95
Napoleon 1812	£10.95
Napoleon/The Myth of the Saviour	£14.95
Napoleonic Propaganda	£17.50
Napoleons War in Spain	£19.00
Napoleon et Ses Grogards	£7.50
Campaign of the Western Pyrenees (Limited Edition Facsimile) (Batty)	£22.00
Wellington's War (Peninsular Dispatches)	£15.00
Letters Written by Lt-Gen T. D'Neley on Active Service Between 1806 & 1815	£5.50
Letters From Portugal & Spain Written During the March Under Sir John Moore	£20.00
Guide Napoleonien	£13.50
Memoirs of Sergeant Bourgogne 1812-13	£11.95
Diary of Campaigns in the Peninsula 1811, 1812, 1813 (Swabey)	£8.50
In Hell Before Daylight	£10.50
Austerlitz 1805	£7.50
A Detailed Account of the Battle of Austerlitz by the Austrian Major-General (Stutterheim)	£8.50
The Supper: Life of Rowland Lord Hill	£16.00

The Tragedy of Philippe D'Auvergne	£4.95
Napoleon Conquest of Prussia 1806	£9.50
Napoleon's Russian Campaign	£39.50
La Campagne de Russie-Napoleon 1812	£29.95
Napoleon et la Russie	£29.95
The Campaign of 1812 in Russia (Clauewitz)	£28.95
Imperial Sunset-Fall of Napoleon 1813-14	£7.50
The Murder of Napoleon (Mod. Forensic Medicine Discovers History's Crime)	£7.50
History of the Campaign in the Year 1815 (Limited Facsimile Edition) (Muffling)	£21.50
Historical Sketch of the Campaign 1815 (Limited Facsimile Edition) (Batty)	£20.00
The Campaign of 1815 (Ltd Facsimile Ed) (Gourmand)	£20.00
Napoleonic Armies H/Bk (Johnson)	£9.50
Napoleonic Armies P/Bk (Johnson)	£5.95

AMERICAN CIVIL WAR

Battlefields of the Civil War	£8.95
Battles & Leaders of American Civil War Vol. 1/The Opening Battles	£9.95
Vol. 2/The Struggle Intensifies	£9.95
Vol. 3/The Tide Shifts	£9.95
Vol. 4/Retreat with Honour	£9.95
Flawed Victory - American Civil War	£20.25
The Union Reader	£12.95
The Confederate Reader	£12.95
From Manassas to Appomattox	£12.95
Campaigning with Grant (Porter H) Cole's Cavalry or 3 years in the saddle in the Shenandoah Valley (1895 reprint)	£9.95
A Battlefield Atlas of the Civil War	£12.95
Long Endure; The Civil War Period 1852-67	£22.95
The Memorial War Book (1894 R/p)	£9.95
Uniforms of the American Civil War	£3.95
The Siege of Allentown 1964	£9.95
The Civil War (with Battlefield Map)	£9.95
They Met at Gettysburg	£5.95
The Civil War	£4.95
The Civil War Almanac	£12.95
Pict Encyc Civil War Med Inat & Equip	£6.50
Civil War Art	£14.95
Campfires & Battlefields: The Pictorial History of the Civil War	£12.95
The Civil War: Strange & Fasc Facts	£5.95
Civil War - Eyewitness Reports	£24.75
Battles/Leaders of the Am Civil War	£7.95
Face of Rbl E Lee Life/Legend	£4.95
Commanders of the Army of the Potomac	£41.95
The American Civil War	£5.95
Attack & Die (Civ War Taclica Southern)	£24.95
A Matter of Hours (Harper's Ferry)	£16.50
III. Hist. American Civil War	£9.95
Mathew Brady's III Hist Civil War	£12.95
The Image of War 1861-1965	
Volume 1/Shadow of the Storm	£29.50
Volume 2/The Guns of '62	£29.50
Volume 3/The Embattled Confederacy	£34.50
Volume 4/Fighting for Time	£34.50

BENDER BOOKS

The History of the German Steel Helmet 1916-45	£24.95
Cloth Insignia of the NSDAP and SA	£24.95

AND MANY THOUSANDS MORE TITLES covered by our NAVAL/MILITARY/AVIATION SPECIALISATION

Post: one book £1.25 two £1.75 three or more £2.25 anywhere in the world. All prices subject to alteration without notice. Access (Eurocard, Mastercharge & Interbank) & Barclaycards (Visa) welcome. Phone your card number for immediate despatch.

T. E. Lawrence, 1917

JOE BERTON
Paintings by KEVIN LYLES

There is no space here for a summary of the extraordinary career and enigmatic character of T. E. Lawrence, whose life continues to attract scholars even today; the bibliography lists a few major sources. Our purpose here is to reconstruct his appearance between November 1916 and October 1918: the period between his attachment to Emir Feisal's Arab forces in revolt against Turkey in the Hejaz, and their triumphant capture of Damascus.

During 1917 Lawrence — 'Emir Dynamite' to the bedouin — served as the political liaison officer and technical adviser to a bedouin guerrilla army which, by hit-and-run raiding of posts and convoys, and particularly by demolition and ambush along the Turks' strategic Damascus/Medina railway, tied down some 25,000 Turkish troops, thus aiding Gen. Allenby's conventional operations in the theatre.

Hardened to their grim desert environment, the bedouin on their swift she-camels were remarkably mobile and enduring. They could march 50 miles a day with ease — up to 110, in emergencies. A 45-lb. flour sack served each rider as six weeks' rations, from which he baked for himself. Little water was carried: camels needed water every three days, but this gave them a radius of about 250 miles, and few wells were more than 100 miles apart. The camels grazed for their own fodder; and if necessary, the weakest could be slaughtered to

provide 200 lb. of meat. The tribal raiding parties had a combat range of 1,000 miles out and home. Each man carried a rifle and 100 rounds; and after a successful raid they appropriated new weapons and equipment as available. Lawrence trained his men to handle explosives, and in one four-month period they destroyed no less than 17 locomotives along the Hejaz Railway.

LAWRENCE'S COSTUME

'If you wear Arab things, wear the best. Clothes are significant among the tribes, and you must wear the appropriate, and appear at ease in them. Dress like a Sherif, if they agree to it.' Thus Lawrence's advice to British officers serving with the bedouin. His own scrapbook of photographs, and surviving examples of his Arab

dress, give a more accurate picture of his campaign appearance than the carefully posed white-clad post-war portraits.

... The army uniform was abominable when camel-riding or when sitting on the ground; and Arab things, which I learned to manage before the war, were cleaner and more decent in the desert.² This simple, practical outfit consisted of the *thob*, *zebum*, *abayeh*, *keffiyeh* and *agal*. The *thob* is an ankle-length white garment with long sleeves and high collar, with several buttons down the front and sometimes embroidery round the neck. Over this may be worn the *zebum*: the Ashmolean Museum at Oxford has two which belonged to Lawrence. Richly embroidered, of fragile woven silk, the *zebum* was worn on special occasions.

The everyday alternative is the wide, sack-shaped, sleeveless cloak or *abayeh*, made of woven camel hair, cotton, or silk with metallic thread embroidery round the neck. Lawrence's silk *abayeh* on display at the Imperial War Museum is light brown with white stripes; photographs taken on campaign at Wadi Itm show him wearing a solid-colour *abayeh*. From Akaba he wrote home: 'Do you remember a very light dusty-amber silk cloak I brought back with me once from Aleppo? If it is not in use, I would be very glad to have it ... Arab clothes are hard to find now-a-days with manufacture and transport thrown out of gear.'³

Full length portraits by Augustus John, James McBey and William Rothenstein show a solid brown *abayeh* with gold trim. There is also an interesting *abayeh* at Lawrence's home, Clouds Hill. This was donated by Sir Alec Guinness, who writes: 'It is a garment that [Sir Sidney] Cockerell ... gave ... to T.E. as a dressing gown, and eventually T.E. left it to G.B.S. [George Bernard Shaw] who also used it as a dressing gown. It was finally sent back to Cockerell, who gave it to me.'⁴

On his head Lawrence would wear the *keffiyeh* headcloth, held in place by the *agal*. Photographs show him wearing both white and patterned headcloths, though an example of his now at All Souls, Oxford is of red silk. Early in the campaign he wrote home: 'If that silk headcloth with the silver ducks on it ... still exists, will you send it out to me?'⁵

The *agal* fitted like a crown over the *keffiyeh*. Instead of a simple goathair rope wound twice round the head, men of status wore ornate versions woven with metallic wire, trimmed in red or white, with a hanging tassel or two at the back. At least two of Lawrence's survive; one at the Imperial War Museum (gold and red, with white cords showing at the corners, and white tassel) and one at All Souls (gold with red cords and tassels).

Around his waist under the *abayeh* Lawrence wore a woven or embroidered belt (several basically similar belts appear in photographs, with different amounts of decoration) supporting the *jambiya* or Arab dagger. He had three such daggers during the course of the campaign. The first, a silver-gilt example given him by the Emir Abdullah, he later gave to a Howeitat chief. The second was given him by Sherif Nasir, and he describes it as '... a heavy thing and I discarded it with pleasure for the gold one which had been made with my order ... the gold one I wore for the rest of the war, except when it was being repaired or re-belted.'⁶ After the war Lawrence had the gold dagger valued by Spinks (at £125); his friend Lionel Curtis bought it from him, and later presented it to All Souls.

Lawrence's rifle is displayed in the Imperial War Museum, and has an interesting history. A Short Magazine Lee Enfield No. 1 Mk. III, it was captured by the Turks at Gallipoli, and near the lock is engraved in gold 'Booty captured in the fighting at Chanak Kale'. It was then presented to the Emir Feisal



Here Lawrence wears a patterned keffiyeh; his gold and red agal; a solid-coloured gold-trimmed abeyah; a plain white thob; and his gold dagger on a patterned belt, probably black and white with a gold buckle plate. (Imperial War Museum)

by Enver Pasha. After the outbreak of the Arab revolt Feisal used it until December 1916, when he gave it to Lawrence, who carried it until the capture of Damascus in October 1918. After the war he, in turn, presented it to King George V.

CAMEL HARNESS

The camel riding saddle or *shdad* is basically two inverted 'Y' pieces of tamarisk wood joined by four crosspieces, lashed together with leather thongs. The pommels are usually bound with simple leather wrappings, or decorated with geometric designs or nail-heads. Cushions filled with camel hair are tied to the inside of this frame, and the saddle is placed directly on to the hump. Woven or leather girth straps wrap under the belly. A simple woven blanket is placed over the saddle, followed by the multi-coloured saddlebags, or *khurj*.

These decorated saddlebags are spectacular, being made of weft weave in red, blue, orange and white wool in geometric patterns, with many black tassels swinging free. This beautiful piece of equipment is also practical: the sides form giant envelopes, to carry supplies. Two holes, at front and rear of the central strip between the bags proper, slip over the pommels.

Another woven piece, or a leather cushion, called a *mirakah* is placed on the front of the camel's hump and tied



to the saddle, for the rider's legs to rest upon. Finally, a sheepskin is placed over the seat, for comfort. The camel's head harness would also be decorated; photographs show Lawrence's mounts with headstalls or *rasan* made of weft weave, with hanging tassels. In *The Seven Pillars of Wisdom* he describes his saddle and *khurj* as being very well made and colourful, and photographs in the Imperial War Museum bear this out.

MI

Sources and acknowledgements:

- Graves, Richard Perceval, *Lawrence of Arabia and His World* (Scribners, 1976)
Lawrence, M. R. (ed.), *The Home Letters of T. E. Lawrence and His Brothers* (Blackwell, 1954)
Lawrence, T. E., *Evolution of a Revolt: Early Post-War Writings of T. E. Lawrence*, ed. & intro. Stanley & Rodelle Weintraub (Pennsylvania State University Press, 1968)
Lawrence, T. E., *Seven Pillars of Wisdom* (Jonathan Cape, 1935)
Weir, Shelagh, *The Bedouin* (World of Islam Festival Publishing, London, 1976)

Kevin Lyles's reconstructions on p. 52 show Lawrence (foreground) wearing the gold, white and red agal and striped brown and white abayah now preserved in the Imperial War Museum, but with a thob showing a standing collar and many small covered front buttons, as shown in photographs and the Augustus John portrait. His third, gold dagger is worn on a decorated belt, reconstructed from photographs and from the plainer example now at All Souls, Oxford. (Right) T.E.L. is shown riding his camel, its harness reconstructed from photographs and from actual examples of this traditional work. He wears the gold and red agal now at All Souls, and a brown abayah with gold trim at the neck and part way down the front opening, reconstructed from photographs and from the Augustus John and James McBey portraits.

Left: Lawrence's gold dagger, gold and red agal, and ring. Note that the agal is made as one continuous piece spiralling round the head, and tying at the back with red cords ending in two hanging tassels. (Author's photograph, courtesy All Souls, Oxford)

Wilson, J. M., T. E. Lawrence 'Lawrence of Arabia' (set of 6 slides with commentary: Ashmolean Museum, Oxford, 1976)

The author gratefully acknowledges the assistance of All Souls, Oxford, and the Imperial War Museum, London.

Notes:

- (1) *Arab Bulletin*, 20 August 1917
- (2) *Seven Pillars*, p. 126
- (3) *Home Letters*, p. 341
- (4) *Clouds Hill* (National Trust), p. 11
- (5) *Home Letters*, p. 332
- (6) Wilson, J. M., *op. cit.*, p. 20

Left: Lawrence's Short Magazine Lee Enfield, Rifle No. 1 Mark III. The immediate identifying characteristics of the Mark are a dial sight set into the left side of the forestock, with its swivelling eyepiece mounted with the safety catch at the left rear of the action; and a knurled cylindrical grip, for the magazine cut-off, protruding from the right side of the action. As displayed today, Lawrence's rifle has a dark brown leather sling through swivels on the butt and barrel-band. Like the bedouin, he probably carried it slung from the rear pommel of his camel saddle. (Main photograph, Imperial War Museum courtesy Frederick Wilkinson). The detail view shows the gold inlaid inscription, and below it Lawrence's incised initials. (Author's photograph)



T.E. Lawrence, 1917



K. Lyles.